



MARK PESTRELLA, Director

**COUNTY OF LOS ANGELES**  
**DEPARTMENT OF PUBLIC WORKS**

*"To Enrich Lives Through Effective and Caring Service"*

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IN REPLY PLEASE  
REFER TO FILE

April 05, 2022

The Honorable Board of Supervisors  
County of Los Angeles  
383 Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, California 90012

Dear Supervisors:

**CONSTRUCTION CONTRACT  
CONSTRUCTION MANAGEMENT CORE SERVICE AREA  
APPROVE PROJECT REVISIONS  
APPROVE USE OF JOB ORDER CONTRACT  
BALLONA CREEK TRASH INTERCEPTOR PILOT PROJECT  
PROJECT NO. FCC0001350  
IN THE CITY OF LOS ANGELES  
(SUPERVISORIAL DISTRICT 2)  
(3 VOTES)**

**SUBJECT**

Public Works is seeking Board approval of the proposed revisions to the Ballona Creek Trash Interceptor Pilot Project and authorization to remodel Ballona Creek with a mooring system for the project using a Board-approved Job Order Contract.

**IT IS RECOMMENDED THAT THE BOARD:**

1. Find that the previously approved project and the use of a Job Order Contract for the Ballona Creek mooring system are within the previous finding of exemption under the California Environmental Quality Act; and that the proposed revisions to the Ballona Creek Trash Interceptor Pilot Project are also exempt for the reasons stated in this letter and in the record of the project.
2. Approve the project revisions to the Ballona Creek Trash Interceptor Pilot Project.
3. Authorize the Director of Public Works or his designee to remodel and reinforce Ballona Creek with the mooring system for the Ballona Creek Trash Interceptor Pilot Project using a Board-approved Job Order Contract.

## **PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

Approval of the recommended actions will find that the previously approved project and use of Job Order Contract (JOC) are within the scope of the previous finding of exemption under the California Environmental Quality Act (CEQA) and the project revisions to the Ballona Creek Trash Interceptor Pilot Project also exempt from CEQA; and authorize Public Works to remodel Ballona Creek with a mooring system for the Pilot Project using a Board approved JOC.

### **Pilot Project Background**

The purpose of the Pilot Project is to test the efficiency of The Ocean Cleanup (TOC) Interceptor System in capturing floating plastics and other trash in Ballona Creek located in the City of Los Angeles. The interceptor is a single floating vessel-like device to be moored in Ballona Creek. The placement of floating trash boom barriers and the downstream current will cause drifting trash to be funneled into the interceptor.

On November 5, 2019, the Board approved a motion to establish a partnership with TOC to implement the Pilot Project, found it exempt from CEQA, and authorized Public Works to negotiate and enter into an agreement with TOC. On November 15, 2019, the Los Angeles County Flood Control District entered into the agreement with TOC to implement the Pilot Project (Agreement).

### **Pilot Project Revisions**

The location for the Pilot Project was initially proposed to be immediately upstream of the Pacific Avenue Bridge. However, after determining that the limited height clearance below the bridge would inhibit the deployment, operation, and maintenance of the interceptor, the location of the Pilot Project was moved approximately 500 feet downstream of the Pacific Avenue Bridge as depicted in the enclosed diagram (Enclosure A).

Under the Agreement, TOC is responsible for manufacturing, delivery, and assembly of the interceptor. TOC had originally planned to deliver the interceptor in component parts for assembly at a location near the Pilot Project site but will now deliver it fully assembled to the County for deployment.

### **Pilot Project Refinements**

The Agreement requires TOC to provide cameras to monitor the performance of the interceptor and to quantify the trash and debris in Ballona Creek. Public Works and TOC have completed the design for the camera placement, which consists of four cameras mounted with brackets. The cameras will be placed on the side of the Pacific Avenue Bridge below the bridge deck on the downstream side to monitor the Pilot Project.

The Agreement specifies that the District is responsible for construction of a mooring system on the banks of Ballona Creek, which will serve as anchor points for the floating interceptor. The District utilized Public Works' in-house licensed engineering staff to design the mooring system that includes remodeling and reinforcing the banks of Ballona Creek with six moorings to support the interceptor. Public Works is seeking approval from the Board to complete the remodeling and reinforcement work on the Ballona Creek using a Board-approved JOC.

Construction is anticipated to begin in April 2022 and be completed in September 2022.

### **Implementation of Strategic Plan Goals**

These recommendations support the County Strategic Plan: Strategy III.3, Pursue Operational Effectiveness, Fiscal Responsibility, and Accountability, and Objective III.3.2, Manage and Maximize County Assets. The recommended action supports ongoing efforts to manage and improve the operational effectiveness of public infrastructure assets.

### **FISCAL IMPACT/FINANCING**

The proposed revisions to the Pilot Project will not increase the District's financial obligations under the Agreement. The total project cost, including plans and specifications, plan check, consultant services, construction, change order contingency, and Public Works services, is currently estimated at \$4,700,000. The JOC construction cost, which is included in the total project cost, is estimated to be \$1,950,000.

Funding for this Pilot Project is included in the District's Fund (B07 - Services and Supplies) Fiscal Year 2021-22 Budget. Funding for operation and maintenance of the interceptor for the pilot period estimated at \$350,000 annually will be included in the District Fund budget starting with the Fiscal Year 2022-23 Budget during the annual budget process.

There will be no impact to the net County costs.

### **FACTS AND PROVISIONS/LEGAL REQUIREMENTS**

In accordance with Board Policy 5.270, Countywide Local and Targeted Worker Hiring for projects with a total budget over \$2,500,000, the Pilot Project will require that at least 30 percent of the total California craft worker hours for construction of the project be performed by Local Residents and at least 10 percent be performed by Targeted Workers facing employment barriers.

The Pilot Project is being implemented by the District. The 1984 Operating Agreement between the County and the District authorizes the County to provide labor and services, including County contractors for District projects.

Public Works anticipates additional contracts with vendors will be necessary for deployment, operation, and maintenance of the interceptor.

### **ENVIRONMENTAL DOCUMENTATION**

On November 5, 2019, the Board found the Pilot Project to be statutorily exempt from CEQA pursuant to Section 21102 of the California Public Resources Code and Section 15262 of the State CEQA Guidelines that applies to feasibility and planning studies for possible future actions where environmental factors have been considered; and categorically exempt under Section 15306 of the State CEQA Guidelines that applies to data collection, research, experimental management, and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. A Notice of Exemption was filed with the Registrar-Recorder/County Clerk for the Pilot Project on November 5, 2019.

Pursuant to the Environmental Evaluation (Enclosure B) completed by Public Works, the previously approved Pilot Project, with the proposed project refinements, continues to be within the scope of the previous finding of exemption.

The Pilot Project revisions, which include revising the location of the interceptor from upstream to downstream of the Pacific Avenue Bridge and delivering the interceptor fully assembled rather than in parts, are also exempt from CEQA under the same provisions included in the previous finding of exemption, Section 21102 of the Public Resources Code and Sections 15262 and 15306 of the State CEQA Guidelines. The Environmental Evaluation demonstrates that environmental factors have been considered for the Pilot Project.

Additionally, as supported in the Environmental Evaluation, the Pilot Project will continue to comply with all applicable regulations, is not located in a sensitive environment, and there are no cumulative impacts, unusual circumstances, damage to scenic highways, listing on hazardous waste sites compiled pursuant to Government Code Section 65962.5, or indications that the project may cause a substantial adverse change in the significance of a historical resource that would make the exemption inapplicable based on the records of the project.

Upon the Board's approval of the recommended actions, Public Works will file a Notice of Exemption with the Registrar-Recorder/County Clerk in accordance with Section 21152 of the California Public Resources Code and will post the notice to its website pursuant to Section 21092.2.

### **CONTRACTING PROCESS**

Public Works completed the project design with licensed in-house staff and is recommending the use of a Board-approved JOC to complete construction of the mooring system.

The project scope includes remodeling and alteration work to the banks of Ballona Creek and Public Works has made the determination that the use of a JOC is the most appropriate contracting method to complete the work.

### **IMPACT ON CURRENT SERVICES (OR PROJECTS)**

Approval of the recommended actions will have no impact on current services or projects. Ballona Creek will remain operational for flood control during construction, and the contractor will be required to coordinate construction activities with Public Works to minimize disruption of flood control operations and public access. Upon completion, the Pilot Project will provide an additional means for collecting the influx of trash from the surrounding urban watershed and upstream municipalities after heavy storms.

**CONCLUSION**

Please return one adopted copy of this Board letter to Public Works, Project Management Division I.

Respectfully submitted,



MARK PESTRELLA, PE

Director

MP:LR:rp

Enclosures

c: Chief Executive Office (Chia-Ann Yen)  
County Counsel  
Executive Office  
Internal Services Department (Countywide  
Contract Compliance)

Proposed Project Location



Concur   
for Carolina T Hernandez, PE

March 22, 2022

TO: Carolina T Hernandez, PE  
Stormwater Planning Division

FROM: Mark A. Lombos, PE   
Stormwater Quality Division

**ENVIRONMENTAL EVALUATION  
BALLONA CREEK TRASH INTERCEPTOR PILOT PROJECT  
PROJECT ID SWQD.EE.2022.00013**

Provided herein is an environmental evaluation and finding for compliance with the California Environmental Quality Act (CEQA) associated with project revisions and refinements for the Ballona Creek Trash Interceptor Pilot Project (Pilot Project).

**I. Background**

The purpose of the Pilot Project is to test the efficiency of The Ocean Cleanup (TOC) Interceptor in capturing floating plastics and other trash in Ballona Creek, located in the City of Los Angeles, during the pilot period covering two storm seasons (October 1 to April 30). The Interceptor is a single floating vessel-like device to be moored in Ballona Creek. The placement of floating trash boom barriers and the downstream current will cause drifting trash to be funneled into the Interceptor.

Stormwater Quality Division prepared an environmental evaluation of the Pilot Project, dated November 5, 2019, which concluded that the Pilot Project is exempt from CEQA per Section 15262 because it involves a feasibility study of the Interceptor as a trash removal option within Ballona Creek for possible future action, which the Los Angeles County Board of Supervisors has not approved, adopted, or funded after having considered environmental factors. The 2019 environmental evaluation concluded that the Pilot Project is exempt per Section 15306 of the State CEQA Guidelines and Class 6 of the County's Environmental Document Reporting Procedures and Guidelines, Appendix G, because it consists of basic data collection and research regarding the Interceptor's effectiveness to abate trash in Los Angeles County watersheds and prevent it from reaching the ocean.

On November 5, 2019, the Board approved a motion that found the Pilot Project exempt from CEQA and authorized Public Works to negotiate and enter into an agreement with TOC or one of its affiliate companies to establish a partnership to implement the Pilot Project. A Notice of Exemption was filed on November 5, 2019, which found the Pilot Project exempt per Section 15262 and 15306 of the State CEQA Guidelines and Class 6 of the County's Environmental Document Reporting Procedures and Guidelines, Appendix G. On November 15, 2019, the Los Angeles County Flood Control District entered into the agreement with TOC to implement the Pilot Project (Agreement).

Public Works is seeking Board approval of certain revisions to the Pilot Project and authorization for the Director of Public Works or his designee to construct a mooring system for the project using a Board-approved Job Order Contract (JOC). In addition, certain refinements to the Pilot Project have been made since filing of the Notice of Exemption (NOE) in 2019.

## **II. Pilot Project Revisions and Refinements**

### Pilot Project Revisions

The Pilot Project was initially proposed to be located approximately 650 feet upstream of the Pacific Avenue Bridge. However, the District and TOC are proposing to move the location of the Pilot Project to approximately 500 feet downstream of the Pacific Avenue Bridge, as shown in Figure 1.

Furthermore, TOC had originally planned to ship and deliver the Interceptor in component parts for assembly at a location near the Pilot Project site but has since determined to ship and deliver the Interceptor fully assembled to the County for deployment.

### Pilot Project Refinements

Since executing the Agreement and filing the NOE in November 2019, additional details for the Pilot Project have been developed. The Interceptor is approximately 74 feet in length, 29 feet wide, and 18.5 feet in height and would be moored in Ballona Creek via 6 moorings. Four moorings anchor the vessel itself and two moorings each anchor in-water floating trash booms that would be installed above the ordinary high-water mark of Ballona Creek along the two existing jetties. The mooring system includes remodeling the banks of Ballona Creek for the construction of the six moorings.

Figure 1 shows how the Interceptor will be moored and Figure 2 shows a conceptual rendering of the Interceptor.

The Agreement also requires TOC to provide cameras to monitor the performance of the Interceptor and to quantify the trash and debris in Ballona Creek as part of the Pilot Project. Public Works, in conjunction with TOC, has completed the design for the camera placement (referred to herein as "monitoring system"), which consists of four cameras mounted with brackets on the side of the Pacific Avenue Bridge structure (below the bridge deck on the downstream side), to monitor the Pilot Project. This monitoring system will be used to detect plastic at the water surface and measure water levels and surface velocities. By image detection, the image sensors identify and count plastics. The light and detection ranging (LIDAR) sensor measures water level and derives surface flow velocities. The devices are self-sustained, powered by solar energy and use a cellular network to send raw data to a cloud service. The water level, flow velocities, and plastic counts will determine the throughput of plastic debris passing under the devices. No additional lighting is needed to assist in image detection for the monitoring system. Figure 3 shows a conceptual image of the monitoring system and proposed locations of the cameras.

Performance of the Interceptor will also be evaluated through plastic counting and debris composition analysis. For plastic counting, surveyors count plastic by observing the trash from the bridge for up to 5 days a week for approximately 4 weeks to estimate the plastic flux. Debris composition analysis involves direct sampling of floating macroplastics from the creek to determine the dimensions, weight, and plastic category of the sampled items. Debris composition analysis will require 2 people to sample debris from the bridge for at least 20 minutes per day, for at least 5 days during the Pilot Project study period. Both of these methods will be used to calibrate and validate the monitoring system.

### **III. California Environmental Quality Act**

An NOE was filed with the Los Angeles County Clerk on November 5, 2019 (County Clerk File No. 2019292308). The project Revisions and Refinements as outlined above were developed after filing of the NOE. In October 2020, a Cultural Resources Report, a Biological Assessment, Biological Resources Technical Report (BRTR) which included a Marine Biological Study, an Essential Fish Habitat Assessment (EFHA), and Jurisdictional Delineation were prepared to understand the biological resources in the proposed Pilot Project location. In addition, in March 2022, odor, noise, lighting, and vector assessments were conducted to understand the impacts of

the Interceptor to these factors at the proposed Pilot Project location. These studies are included in Attachments A through I.

The Pilot Project, including the project Revisions and Refinements, remains statutorily exempt pursuant to Section 15262 and categorically exempt pursuant to Section 15306 and 15311 of the State CEQA Guidelines and Class 6 and 11 of the County's Environmental Document Reporting Procedures and Guidelines, Appendix G.

A. Article 18. Statutory Exemptions. Section 15262 - Planning and Feasibility Studies

The Revisions and Refinements for the Pilot Project do not change the prior conclusion that the Pilot Project is statutorily exempt pursuant to Section 15262.

State CEQA Guidelines Section 15262, Feasibility and Planning Studies

*A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or negative declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities.*

The purpose of the Pilot Project to test the performance and feasibility of the Interceptor in Ballona Creek over two storm seasons has not changed; thus, the exemption under Section 15262, Feasibility and Planning Studies still applies.

As in the 2019 Environmental Evaluation and NOE, the list of the environmental factors from Appendix G of the State CEQA Guidelines was used in the consideration of environmental resources in this environmental evaluation. In light of the Revisions and Refinements, the proposed Pilot Project's impacts to Aesthetics, Air Quality, Biological Resources, and Cultural Resources, and Noise are evaluated and considered in the discussion below. The Revisions and Refinements do not affect the previous evaluation and consideration of the following environmental factors, and no changes to the prior consideration and analysis are necessary as a result of the Revisions and Refinements: Agriculture and Forestry Resources; Energy; Geology and Soils; Greenhouse Gas Emissions; Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; Recreation; Transportation; Tribal Cultural Resources; Utilities and Service Systems; Wildfire; and Mandatory Findings of Significance.

- Aesthetics

Impacts to aesthetics could include degrading existing character or quality of the site or its surroundings or adverse effects on a scenic vista. It could also include the creation of a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. Several studies and assessments conducted by Stantec provide information for the consideration of the Revisions and Refinements to aesthetics.

The cultural resources investigation identifies that the Pacific Avenue Bridge is considered an historic property for the purposes of Section 106 of the National Historic Preservation Act (NHPA), adding to the existing character or quality of the area. With the Revisions and Refinements, the Interceptor would still be visible from several vantage points at and near the Pacific Avenue Bridge; however, the placement of the vessel would be several hundred feet away and the distance would reduce any visual effects to a level that would not diminish the integrity of the bridge. Furthermore, the cultural resources investigation also determined that the monitoring system would be visible from below the bridge. The monitoring system would not require any major structural alterations to the bridge, but rather small points of attachments at select locations that, if removed, could be repaired in-kind to match existing conditions. The cultural resources investigation confirmed that installation of the Interceptor would not result in visual impacts of the Pacific Avenue Bridge (*Stantec, 2020*). Therefore, the Pilot Project is not anticipated to degrade existing character or quality of the site and its surroundings.

Renderings of the Interceptor are shown in Figure 4 and demonstrate that the Interceptor is visible from the surrounding area, but does not block the view of the ocean or other scenic vista. Additionally, a vector assessment was conducted to address concerns for the Interceptor capturing trash that would attract birds and other vectors, which could affect the existing quality of the area. This study analyzed potential vector nuisances to adjacent residential and public sensitive receptors as a result of the Interceptor. With the implementation of the operations and maintenance activities and preventative controls outlined in the Pilot Project's Operations, Maintenance, Repair, Rehabilitation, and Replacement Plan (OMRRR Plan), the likelihood of vector presence/nuisance is minimal (*Stantec, 2022*). Therefore, the Pilot Project is not anticipated to result in adverse effects on scenic vista.

The lighting assessment confirmed that the land uses surrounding the Pilot Project site are the main source of daytime glare and nighttime lighting. In general, there is moderate glare and nighttime lighting from these land uses, typical of urban areas and active harbors. Daytime glare is primarily generated from parked cars and passing vehicles, glass windows and reflective building materials, and from the reflection of the sun on the water's surface. Nighttime sources of light are concentrated in the populated areas and the harbor, which includes green navigation lights on the Ballona Creek North and South jetties which flash every 4 and 6 seconds, respectively; and red navigation lights on the North and South breakwaters which flash every 4 and 6 seconds, respectively, to alert boats entering the Marina del Rey Harbor. Other sources of nighttime lighting consist of navigation lighting on recreational and commercial boats within the Marina del Rey Harbor and Pacific Ocean, street lighting along 62nd Avenue and Pacific Avenue, residential exterior and interior lighting, and headlights from vehicles travelling on the adjacent residential streets.

The Interceptor is not considered a seafaring vessel since it will be anchored in place at the mouth of Ballona Creek. Nevertheless, the lighting assessment assumes that navigation lighting requirements for seafaring vessels would apply to the Pilot Project, given its placement within Ballona Creek and proximity to the Marina del Rey Harbor where there is existing maritime traffic. Therefore, it is anticipated that the Interceptor would have up to two white, omni-directional lights on the roof, as applicable, in accordance with United States Coast Guard (USCG) requirements. Additionally, previous Interceptor deployments included navigation lights on the trash booms for safety, and LED lighting strips placed along either side of the canopy of the Interceptor for aesthetic purposes and are anticipated to be included for the Pilot Project. All Pilot Project lighting would operate from sunset to sunrise and would be designed to not shine light directly on the water surface to minimize glare impacts.

The lighting assessment determined that these potential visual effects would be consistent with existing sources of nighttime lighting from recreational and commercial vessels in and around the Marina del Rey Harbor. The Pilot Project would be located within an urbanized setting, where light-emitting sources are common and present in views up and down the shoreline and within developed areas. Specifically, the omni-directional navigation lights presumed to be required for the Pilot Project would be similar in visibility and intensity to lighting required for any operational vessel in the harbor area. Though not currently

present within Ballona Creek, such navigation lighting is common throughout the broader harbor area—on jetties, the breakwater, and on boats coming in and out of the harbor—and something to which viewers are therefore likely habituated to seeing (*Stantec, 2022*). Therefore, while the Pilot Project would introduce new sources of light, it is not anticipated to adversely affect daytime or nighttime views in the area.

Furthermore, the 2019 environmental evaluation discussed that the assembly of the Interceptor would be conducted during the day; however, assembly of the Interceptor will be complete prior to delivery; thus, this activity will not contribute to potential impacts.

Therefore, the project Revisions and Refinements are not anticipated to significantly impact aesthetics.

- Air Quality

The monitoring system consists of data collection, which would not have any emissions that would impact air quality. The plastic collection and debris composition analysis was not previously considered in the evaluation and will require surveying up to 5 days a week for approximately 4 weeks during the Pilot Project period. However, vehicle emissions from driving to the Pilot Project site is not anticipated to significantly impact air quality and will be limited to the duration of the study.

In addition to the previous evaluation, an odor assessment was conducted by Stantec, which confirmed that the Interceptor is not anticipated to generate nuisance odor that will impact existing residential receptors. The odor analysis described that odor would dissipate with distance, but odor emissions have the potential to be carried by wind. Any odor would travel east or northeast, away from the residences located to the southeast of Pilot Project site. From December to February, there are also strong breezes that originate on-shore and travel from the east, carrying any odor out to open ocean. Residences toward the northeast in the direction of predominant winds are located over 1,200 feet from Pilot Project site and not likely to be subjected to substantial odor. The assessment also identified that routine operation and maintenance activities outlined in the OMRRR Plan would further reduce odor (*Stantec, 2022*). The Pilot Project is not anticipated to result in other emissions that would adversely affect a substantial number of people.

Therefore, the Revisions and Refinements are not anticipated to significantly impact air quality.

- Biological Resources

Studies conducted by Stantec in August 2020 provide information for the consideration of the project Revisions and Refinements to biological resources.

Results from the Biological Assessment, BRTR, and EFHA confirmed that the Pilot Project will not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species, and will not have substantial adverse effect on any riparian habitat or other sensitive natural community, in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service (USFWS).

The Jurisdictional Delineation confirmed that no portion of the Pilot Project would be considered Federal wetlands or meet jurisdictional wetland parameters. Therefore, the Pilot Project is not anticipated to have a substantial adverse effect on State or Federally protected wetlands.

Furthermore, since the last evaluation, the assembly of the Interceptor will be complete prior to delivery; thus, this activity will have no biological resources impacts. The assembly was not anticipated to have biological resources impacts, and the delivery of the assembled Interceptor further ensures that this activity will have no biological impacts. The monitoring system includes installation of cameras on the Pacific Avenue Bridge and is not anticipated to have an adverse effect on any species identified as a candidate, sensitive, or special status species, and will not have substantial adverse effect on any riparian habitat or other sensitive natural community, in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or USFWS. The Pilot Project is not located within a Significant Ecological Area as it is downstream of the Ballona Wetlands (*Los Angeles County, 2020*). It is also not located within an Environmentally Sensitive Area (*Los Angeles County, 2020*). Therefore, the Pilot Project is not anticipated to create any potential impacts to any species identified as a candidate, sensitive, or special-status species.

The project Revisions and Refinements are not anticipated to significantly impact biological resources.

- Cultural Resources

The cultural resources investigation included a detailed field survey of the project area and extensive background research to identify and evaluate the potential for any historic properties in proximity to the Pilot Project. This included a records search conducted by the South Central Coast Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) located at California State University, Fullerton. The study provides additional information for the consideration of environmental factors related to the project Revisions and Refinements.

The investigation identified that Ballona Creek and associated features are not considered historic for the purposes of Section 106 of the NHPA. The cultural resources investigation confirms that there is little to no likelihood that the Pilot Project would impact archaeological or tribal cultural resources to Ballona Creek, and a change in location does not affect the conclusion of the previous consideration of the Pilot Project's impacts to cultural resources and is not anticipated to cause an adverse change of historical resource as defined in the CEQA Guidelines Section 15064.5 (*Stantec, 2020*). In addition, the mooring will be constructed on existing levees that have been previously disturbed; thus, paleontological or geologic features are not anticipated to be disturbed.

The cultural resources investigation identified that the Pacific Avenue Bridge qualified as an historic property for the purposes of Section 106 of the NHPA. However, the investigation confirmed that the Pilot Project would have minimal impact to the bridge. The investigation also noted that the monitoring system will be attached to the Pacific Avenue Bridge and could be visible from below the bridge. The installation would not require any major structural alterations to the components of the bridge, but rather small points of attachments at select locations that would be repaired in-kind to match the existing conditions. The investigation confirmed that the bridge would be retained in its existing condition following the Pilot Project, with minimal impacts to the physical features that characterize the bridge.

Therefore, the Revisions and Refinements to the Pilot Project are not anticipated to disturb, damage, or degrade unique archaeological sites, paleontological resources or unique geologic features and is consistent with any existing regulation or protection of historic resources.

- Noise

A noise assessment was conducted by Stantec which provided information for the consideration of operational noise related to the project Revisions and Refinements.

The previous evaluation anticipated that the increase to ambient noise and groundborne vibrations would be limited to the construction period, and that during operations, the Interceptor was not anticipated to increase ambient noise and groundborne vibrations based on information provided on the design of the Interceptor and that the solar-powered technology would not require noise-generating equipment to run the Interceptor. The noise assessment looked at the potential for increase of noise from the Pilot Project to residential and recreational receptors, and confirmed that the Interceptor would not cause a substantial increase at the nearest residential and recreational receptors (*Stantec, 2022*).

Furthermore, since the Interceptor will be delivered fully assembled, assembly activities will no longer create any potential noise impacts.

Therefore, the project Revisions and Refinements are not anticipated to significantly impact noise.

B. Article 19. Categorical Exemptions.

State CEQA Guidelines Section 15306 – Information Collection, identifies Class 6 exemption as follows:

*Class 6 consists of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded.*

County Environmental Guidelines, Appendix G, Categorically Exempt Projects under Class 6 mirrors the State CEQA guidelines, with a few minor changes:

*Class 6 consists of basic data collection, research, and experimental management and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. These may be for strictly*

*information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted or funded.*

The purpose of the Pilot Project to test the performance and feasibility of the Interceptor in Ballona Creek over two storm seasons has not changed; thus, the exemption under CEQA Guidelines Section 15306, Information Collection, and Class 6 of the County Environmental Guidelines, Appendix G still apply.

State CEQA Guidelines Section 15311 – Accessory Structures, identifies Class 11 exemption as follows:

*Class 11 consists of construction, or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities, including but not limited to:*

*(c) Placement of seasonal or temporary use items such as lifeguard towers, mobile food units, portable restrooms, or similar items in generally the same locations from time to time in publicly owned parks, stadiums, or other facilities designed for public use.*

County Environmental Guidelines, Appendix G, Categorically Exempt Projects under Class 11 mirrors the State CEQA guidelines, with a few minor changes:

*Class 11 consists of construction of replacement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities, including, but not limited to:*

*(h) Placement of seasonal or temporary use items such as lifeguard towers, mobile food units, portable restrooms or similar items in generally the same locations from time to time in publicly owned parks, stadiums, or other facilities designed for public use.*

The Pilot Project will be adding the monitoring system to the Pacific Avenue Bridge (see Figure 3), which is designed for public use and for the purpose of testing the performance of the Interceptor to capture trash; therefore, CEQA Guidelines Section 15311, Accessory Structure, and Class 11 of the County Environmental Guidelines, Appendix G apply.

Pursuant to Section 15300.2 of the CEQA Guidelines, location, cumulative impacts, significant effects, scenic highways, hazardous waste sites, and historical resources are exceptions to the exemptions.

Exception Description	Discussion
<p>(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.</p>	<p>Based on the biological resources studies, and the lighting, noise, odor, and vector assessments, the Pilot Project is not anticipated to be located in a particularly sensitive environment or impact environmental resources of hazardous or critical concern. The original location was downstream of the Ballona Wetlands, which is a Significant Ecological Area. The proposed new location is further downstream of the Ballona Wetlands, which further ensures that Pilot Project would not impact the Ballona Wetlands. The Revisions and Refinements do not change the conclusion that the location exception is inapplicable to the Pilot Project.</p> <p>The project Revisions and Refinements do not preclude the application of this exemption to the Pilot Project.</p>
<p>(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.</p>	<p>Cumulative impacts refer to other past, present, and reasonably foreseeable future projects. The Pilot Project is located downstream of other existing and future trash removal projects in Ballona Creek. The Pilot Project is anticipated to remove residual trash not captured by the trash capture projects upstream of the Pilot Project location. As discussed in the consideration of environmental factors, the Pilot Project is not anticipated to significantly impact the environment. Therefore, the Pilot Project is not anticipated to exacerbate environmental impacts from existing and future trash removal projects given the limited terms of the Pilot Project and its ultimate objective to improve water quality through trash removal. The Pilot Project is not anticipated to result in a significantly adverse cumulative impact when included with successive projects in the same place over time. The project Revisions and Refinements do not change the conclusion that the Cumulative impacts exception is inapplicable to the Pilot Project.</p>

Exception Description	Discussion
	No cumulative impacts would preclude the application of this exemption to the Pilot Project.
<p>(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.</p>	<p>The Pilot Project will still consist of operating the Interceptor to collect information on the system's performance and feasibility for use in Ballona Creek, constructing the moorings and transporting the Interceptor to the project site. Construction activities will be done in compliance with all applicable regulations and best management practices. As previously discussed in the consideration of environmental factors, the Pilot Project is not anticipated to significantly impact the environment. The project Revisions and Refinements do not change the conclusion that the Significant Effect exception is inapplicable to the Pilot Project.</p> <p>No significant effects or unusual circumstances would preclude the application of this exemption to the Pilot Project.</p>
<p>(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.</p>	<p>The proposed new Pilot Project location is located further downstream and would not be visible from the Pacific Coast Highway, which is designated as a state scenic highway and located approximately 1.5 miles northeast of the Pilot Project location. Additionally, the Revisions and Refinements to the Pilot Project will not include construction or other activities on this highway. Furthermore, the cultural resources investigation identified Pacific Avenue Bridge as an historic property for purposes of Section 106 of the NHPA; however, the investigation also found that the Pilot Project would not diminish the identified qualities of significance of the Pacific Avenue Bridge (<i>Stantec, 2020</i>). Therefore, the Pilot Project is not anticipated to result in damage to scenic resources within a highway officially designated as a state scenic highway (<i>DOT, 2019</i>) when located downstream of the Pacific Avenue Bridge. The project Revisions and Refinements do not change the conclusion that the Scenic Highways exception is inapplicable to the Pilot Project.</p>

Exception Description	Discussion
	<p>No scenic resources would preclude the application of this exemption to the Pilot Project.</p>
<p>(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.</p>	<p>A 1,000-foot radius from the northern jetty near the Pilot Project location was used to search the Hazardous Waste databases pursuant to Section 65962.5 of the Government Code and the Pilot Project location is not on any of these lists and there were no hazardous waste facilities located within 1,000 feet of the proposed project site (<i>CalEPA, 2022</i>). The project Revisions and Refinements do not change the conclusion that the Hazardous Waste Sites exception is inapplicable to the Pilot Project.</p> <p>No hazardous waste sites would preclude the application of this exemption to the Pilot Project.</p>
<p>(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.</p>	<p>A cultural resources investigation was conducted and indicated that there is little to no likelihood that the Pilot Project would impact archaeological or tribal cultural resources (<i>Stantec, 2020</i>). While the Pilot Project is located approximately 500 feet downstream of the Pacific Avenue Bridge, which was constructed in 1928 and is identified as historic for the purposes of Section 106 of the NHPA, the cultural resources investigation conducted for the Pilot Project concluded that the Interceptor would not diminish the identified qualities of significance of the Pacific Avenue Bridge (<i>Stantec, 2020</i>). The Pilot Project is not anticipated to cause a substantial adverse change in the significance of an historical resource. The Interceptor will not be located on a listed or designated historical landmark within Los Angeles County (<i>City of Los Angeles Department of City Planning, Office of Historic Resources, County of Los Angeles Historical Landmarks &amp; Records Commission, National Park Service, 2019</i>). The project Revisions and Refinements do not change the conclusion that the Historical Resources exception is inapplicable to the Pilot Project.</p>

Exception Description	Discussion
	No historical resources would preclude the application of this exemption to the Pilot Project.

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## **V. Attachments**

- A. Biological Assessment, October 2020
- B. Biological Resources Technical Report, October 2020
- C. Essential Fish Habitat Assessment Report, October 2020
- D. Cultural Resources Report, October 2020
- E. Jurisdictional Delineation Report, October 2020
- F. Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project, March 2022
- G. Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project, March 2022
- H. Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project, March 2022
- I. Vector Assessment for the Ballona Creek Trash Interceptor™ Pilot Project, March 2022

If you have any questions, please contact Melissa Turcotte, Stormwater Quality Division, Environmental Planning Section, at Extension 7173.

MT:dw

P:\swqpub\Sec\2022\Memo\EnvironEval\BallonaCreekTrashInterceptor

Attach.

Figure 1 – Proposed Project Location



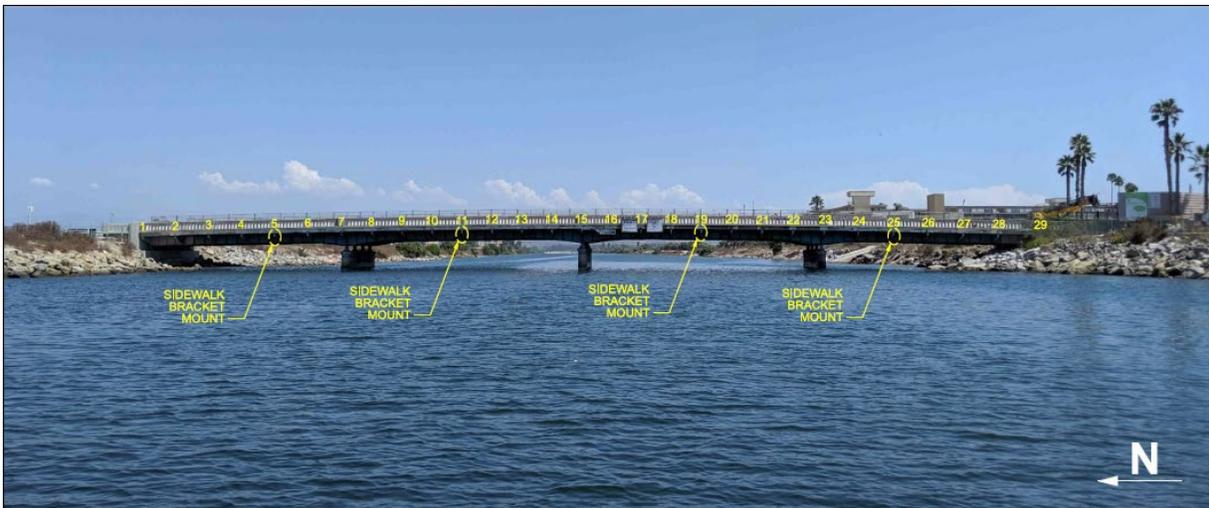
**Figure 2 – Conceptual Rendering of Interceptor**



**Figure 3 – Monitoring System Concept Overview**



**Conceptual Drawing of Monitoring System**

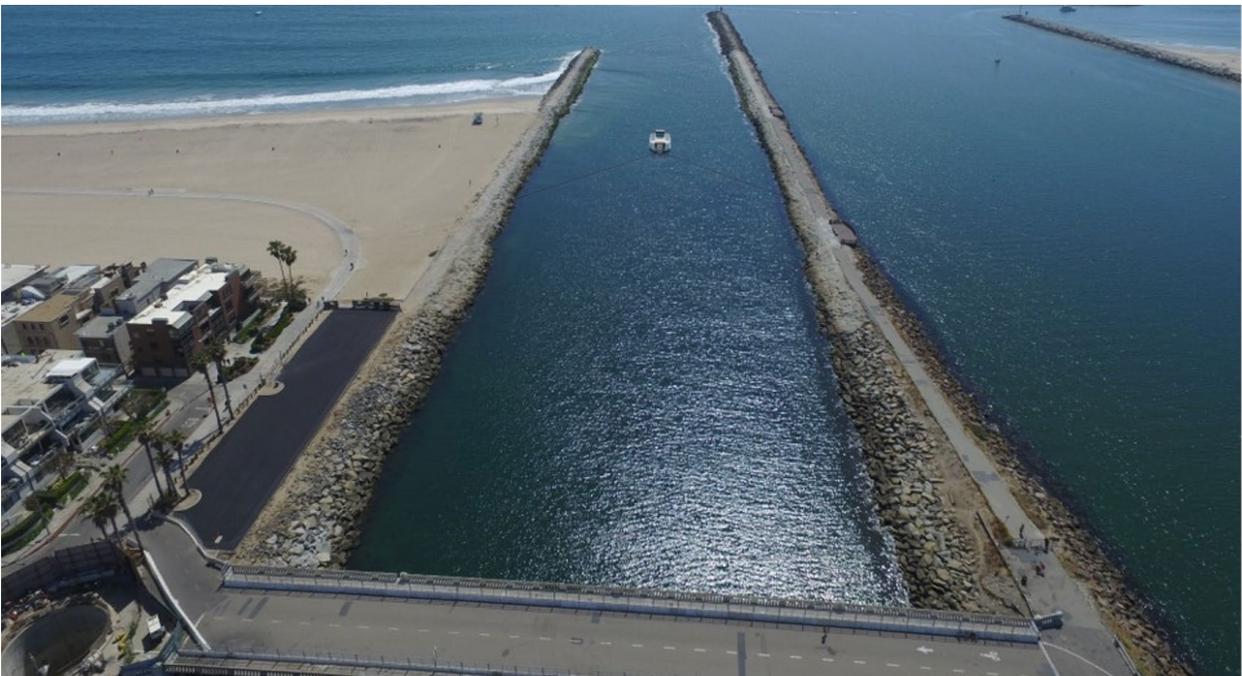


**Proposed Location of Cameras on Pacific Avenue Bridge**

**Figure 4 – Renderings of the Interceptor at Ballona Creek**



**Rendering of a view of the Interceptor from nearby residence**



**Rendering of a view of the Interceptor from above Pacific Avenue Bridge**



**Ballona Creek Trash Interceptor™  
Pilot Project**

Biological Assessment

October 19, 2020

Prepared for:

Los Angeles County Public Works  
900 South Fremont Ave.,  
Alhambra, CA 91803-1331

Prepared by:

Stantec Consulting Services Inc.  
290 Conejo Ridge Avenue  
Thousand Oaks, California 91361

**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Assessment

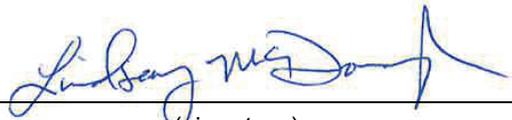
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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Assessment

## Executive Summary

The purpose of this biological assessment (BA) is to provide technical information and to review the Ballona Creek Trash Interceptor™ Pilot Project (project or proposed action) in sufficient detail to determine to what extent the proposed action may affect threatened, endangered, or proposed species. This BA has been prepared for Los Angeles County Public Works (Public Works) in accordance with 50 Code of Federal Regulations Section 402, pursuant to legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S.C. § 1536(c)). This document presents technical information upon which later United States Fish and Wildlife Service (USFWS) decisions regarding project effects on federally listed species are developed.

On behalf of the Los Angeles County Flood Control District (Flood Control District), Public Works is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot project to deploy a floating, automated trash Interceptor™ system (Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. The project would capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and protect the environment. Construction and installation of the project would occur over approximately a six-month period.

The “action area” encompasses approximately 102 acres and includes the proposed location of the Interceptor™ and its components, staging area, and construction-related access routes. Although the habitat within the action area is not suitable habitat for federally listed species, such species may forage and migrate through and immediately adjacent to the action area. Two butterfly species, the El Segundo blue butterfly (*Euphilotes battoides allyni*) (federally endangered (FE)), and the Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*) (FE), have a potential to be present within the action area. Five bird species have a potential to be present within the action area: the western snowy plover (*Charadrius alexandrinus nivosus*) (federally threatened (FT)), southwestern willow flycatcher (*Empidonax traillii extimus*) (FE), coastal California gnatcatcher (*Polioptila californica californica*) (FT), California least tern (*Sternula antillarum browni*) (FE), and least Bell’s vireo (*Vireo bellii pusillus*) (FE). The project is not likely to result in direct or indirect temporary or permanent effects on any of these species, or their associated habitats. The action area is not located within or adjacent to proposed or designated critical habitat for any of the potential species. Therefore, the project would have no effect on designated critical habitat for these seven species.

Avoidance and minimization measures (AMMs) have been incorporated into the project to protect water quality, minimize fugitive dust emissions, prevent the introduction of invasive plant species and protect special-status wildlife. In addition, species-specific AMMs have been identified to avoid adverse effects on the El Segundo blue butterfly, Palos Verdes blue butterfly, western snowy plover, southwestern willow flycatcher, coastal California gnatcatcher, California least tern, and least Bell’s vireo. With implementation of the AMMs, the project would have the following determinations:

- may affect, but is not likely to adversely affect the El Segundo blue butterfly;



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

- may affect, but is not likely to adversely affect the Palos Verdes blue butterfly;
- may affect, but is not likely to adversely affect the western snowy plover;
- may affect, but is not likely to adversely affect the southwestern willow flycatcher;
- may affect, but is not likely to adversely affect the coastal California gnatcatcher;
- may affect, but is not likely to adversely affect the California least tern; and
- may affect, but is not likely to adversely affect the least Bell's vireo.

Although the action area overlaps suitable habitat for the following special-status plant species: marsh sandwort (*Arenaria paludicola*) (FE), Ventura Marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*) (FE), salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*) (FE), San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) (FC), San Diego button-celery (*Eryngium aristulatum* var. *parishii*) (FE), and Gambel's water-cress (*Nasturtium gambelii*) (FE), the project would not result in disturbance to any habitat for these plant species. In addition, none of these plant species were observed during field surveys performed by Stantec in 2020 that were conducted during their blooming periods. Therefore, the project will have no effect on Marsh sandwort, Ventura Marsh milk-vetch, salt marsh bird's-beak, San Fernando Valley spineflower, San Diego button-celery, and Gambel's water-cress. These plant species will not be discussed further in this BA.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
 Biological Assessment

**1.0 Introduction**

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Biological Assessment

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 1.0 Introduction

**Abbreviations**

AMM	Avoidance and Minimization Measure
BA	Biological Assessment
BMP	best management practices
BWER	Ballona Wetlands Ecological Reserve
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
ESA	Federal Endangered Species Act
FE	federally endangered
Flood Control District	Los Angeles County Flood Control District
FR	Federal Register
FT	federally threatened
ft	feet
Interceptor™	Automated trash Interceptor™ system
LARWQCB	Los Angeles Regional Water Quality Control Board
project	Ballona Creek Trash Interceptor™ Pilot Project
proposed action	Ballona Creek Trash Interceptor™ Pilot Project
Public Works	Los Angeles County Public Works
Stantec	Stantec Consulting Services Inc.
USFWS	U.S. Fish and Wildlife Service



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

**1.0 Introduction****1.0 INTRODUCTION**

This Biological Assessment (BA) was prepared by Stantec Consulting Services Inc. (Stantec) in accordance with legal requirements set forth under Section 7 of the Federal Endangered Species Act (ESA) (16 U.S.C. § 1536(c)). The purpose of this BA is to evaluate the potential effects on federally listed species as a result of implementing the proposed action. Federally listed anadromous fish species are discussed in a separate Essential Fish Habitat Assessment (EFHA), to facilitate ESA Section 7 consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS or NOAA Fisheries).

**1.1 PROPOSED ACTION AND PURPOSE**

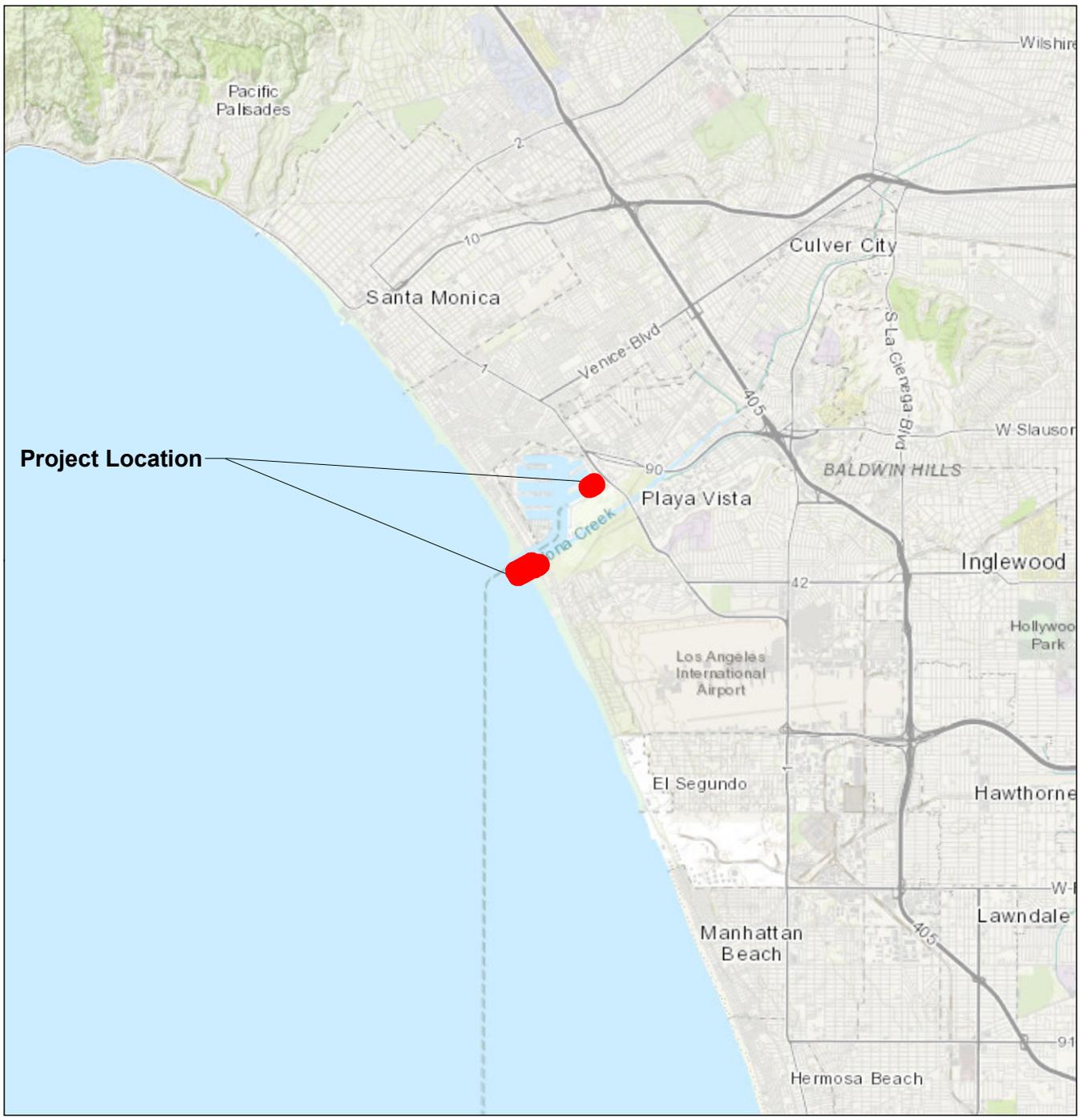
On behalf of the Los Angeles County Flood Control District (Flood Control District), Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot Project to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. Construction and installation of the Project would occur over approximately a six-month period.

The purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment.

The floating Interceptor™ would be a single vessel moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor's™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15). Figure 1 shows the Project Location.



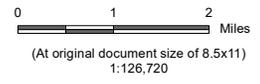
I:\1342-20\1\workgroup\18403\active\18403\268\05\_report\_deliv\dwg\design\maps\_figures\MXD\st\Biological Assessment Report\MXD\Figure1\_BAR\_ProjectLocationMap\_02242020.mxd Revised: 2020-10-16 By: dalaw



**Project Location**



 Project Location



Project Location Prepared by DL on 2020-09-23  
 Ballona Creek TR by ST on 2020-09-23  
 Los Angeles County, California IR by CF on 2020-09-23

Client/Project 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Assessment Report

Figure No.  
**1**

Title  
**Project Location Map**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020.  
 3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT Biological Assessment

### 2.0 Study Methods

## 2.0 STUDY METHODS

### 2.1 SUMMARY

A list of federally listed species and designated and proposed critical habitat with the potential to occur in the action area was obtained from the USFWS (Appendix A). A site survey and literature review, which included a review of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDDB) (CDFW 2020), was also performed to further refine the list of federally listed species that may occur in the action area. Each federally listed species was evaluated, and a determination was made as to whether suitable habitat for the species was present or absent in the action area. For the purpose of this BA, which has been prepared to facilitate consultation with the USFWS under Section 7 of the ESA, seven species (El Segundo blue butterfly, Palos Verdes blue butterfly, western snowy plover, southwestern willow flycatcher, coastal California gnatcatcher, California least tern, and least Bell's vireo) were determined to have the potential to be affected by the proposed action, which is discussed in further detail in Chapter 5.

Information on the biology, distribution, taxonomy, legal status, and other aspects of these species was obtained from the following:

- *Recovery Plan Amendment for El Segundo Blue Butterfly* (USFWS 2019a)
- *Recovery Plan Amendment for Palos Verdes Blue Butterfly* (USFWS 2019b)
- *Recovery Plan for the Pacific Coast Population of the Western Snowy Plover* (USFWS 2007)
- *Western Snowy Plover [Pacific Coast Distinct Population Segment] 5-Year Review* (USFWS 2019c)
- *Final Recovery Plan for Southwestern Willow Flycatcher (*Empidonax traillii extimus*)* (USFWS 2002)
- *2017 Southwestern Willow Flycatcher 5-Year Review: Summary and Evaluation* (USFWS 2017)
- *Coastal California Gnatcatcher (*Poliophtila californica californica*) 5-Year Review* (USFWS 2020a)
- *Revised California Least Tern Recovery Plan* (USFWS 1985)
- *California Least Tern (*Sternula antillarum browni*) 5-Year Review: Summary and Evaluation* (USFWS 2020b)
- *Draft Recovery Plan for the Least Bell's Vireo (*Vireo bellii pusillus*)* (USFWS 1998)
- *Least Bell's Vireo (*Vireo bellii pusillus*) 5-Year Review: Summary and Evaluation* (USFWS 2006)
- other available resources

### 2.2 PERSONNEL AND SURVEY DATES

- Priya Pratap, Biologist, Stantec.  
Biological and botanical survey, February 25, 2020 and March 2, 2020.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 2.0 Study Methods

- Rocky Brown, Biologist, Stantec.  
Biological and botanical survey, February 25, 2020 and March 2, 2020.

**2.3 RESOURCE AGENCY COORDINATION AND PROFESSIONAL CONTACTS**

Stantec obtained a list of federally listed species and species that are proposed, or are candidates for federal listing with the potential to occur in the vicinity of the action area, using the Information for Planning and Consultation tool on September 24, 2020 (Consultation Code: 08ECAR00-2020-SLI-1614). (Appendix A).

**2.4 LIMITATIONS AND ASSUMPTIONS THAT MAY INFLUENCE RESULTS**

No protocol-level surveys were conducted in the action area. However, the potential presence of species was inferred based on the presence of suitable habitat located within the action area and nearby documented past occurrences of the species in similar habitats.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 3.0 Project Description

**3.0 PROJECT DESCRIPTION****3.1 LOCATION**

The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. Figure 1, Project Location Map, shows the general location of the Project. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project. These features are depicted along with the defined action area and project design on Figure 2.

**3.2 PROJECT ACTIVITIES**

The proposed Project would involve the following primary activities:

- Constructing four Interceptor™ moorings, two trash boom moorings, and handrails on top of the adjacent jetties.
- Assembling the main Interceptor™ components in the parking lot adjacent to the public boat launch in the Marina del Rey harbor.
- Floating the Interceptor™ into position using a support vessel.
- Connecting the Interceptor™ and trash booms to the moorings.
- Attaching and detaching the second trash boom from its mooring as needed.
- Operating the Interceptor™ to collect floating trash from Ballona Creek and containerizing it in dumpsters inside the Interceptor™.
- Transferring the Interceptor™'s full dumpsters to Marina del Rey harbor for off-site disposal of trash at an appropriate solid waste facility.
- Transferring empty trash dumpsters from Marina del Rey harbor to the Interceptor™ in support of continued trash collection.
- Monitoring the effectiveness of the Interceptor™ at removing trash from Ballona Creek.
- Installing educational signage communicating the Project's purpose/objectives to the public.

**3.2.1 Construction of Moorings**

The Interceptor™ would be moored to the existing Ballona Creek North and South Jetties above the high-water mark and above the mean high tide line of Ballona Creek using four mooring lines to maintain its position. These mooring lines would sag below the water surface using weights to allow boats to travel over them. The two smooth trash booms would be tethered via connection points on the Interceptor™ and two additional mooring points atop the jetties (for a total of six moorings). Each mooring would have a





  Action Area (102.00 Acres)

Existing Bikeways

**Project Footprint**

Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]

Mooring Footprint [0.113 Acres]

Interceptor Assembly Area [0.62 Acres]

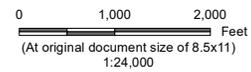
Mooring Construction Staging Areas [0.37 Acres]

Trash Boom

Mooring Line

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Interceptor Centroid Coordinates: 33.962071, -118.455715
3. Data Sources: Stantec 2020.
4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



*Project Location* Prepared by DL on 2020-09-23  
 Ballona Creek TR by ST on 2020-09-23  
 Los Angeles County, California IR by CF on 2020-09-23

*Client/Project* 184031268  
 Los Angeles County Public Works

Ballona Creek Trash Interceptor Pilot Project  
 Biological Assessment

*Figure No.*

**2**

*Title*

**Action Area and Project Design**

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## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

### Biological Assessment

#### 3.0 Project Description

concrete pad which would be installed largely above-grade; minimal excavation to expose clean stone would be required for the moorings to be keyed into the top of the jetties at each location. Ramps with railings would be installed in connection with each mooring. During construction of the moorings on the Ballona Creek North Jetty, the sidewalk on the Ballona Creek North Jetty, between the Pacific Avenue Bridge and the end of the jetty, may need to be closed for public safety. While the Ballona Creek South Jetty does not have a dedicated concrete walkway, it is accessible to the public. Public access to portions of the Ballona Creek South Jetty may need to be blocked during construction of the moorings on the Ballona Creek South Jetty for public safety.

#### 3.2.2 Interceptor™ Assembly

The Interceptor™ would be constructed off-site in the parking lot adjacent to the public boat launch in the Marina del Rey marina harbor.

#### 3.2.3 Trash Boom Operations

The Interceptor™ would use two booms during anticipated high-trash flow events, and one boom in the dry season and when rowers will be expected to need an unrestricted path through the Pilot Project site. The southern boom would stay in place and the northern boom would be clipped and unclipped to the Ballona Creek North Jetty as needed. When not in use, the northern boom would be attached to the north-facing side of the Interceptor™ and “folded” in on itself. This allows the boom to float along the north-facing side of the Interceptor™ without interfering with any components or the operation of the Interceptor™.

#### 3.2.4 Trash Dumpster Removal and Disposal Process

When the Interceptor™ is almost full, it will automatically send a message to the local operators to collect the waste. Operators will then slide the dumpster barge out from the Interceptor™, take it to the Marina del Rey boat harbor, lift and empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpster barge to the Interceptor™.

#### 3.2.5 Installation of Monitoring Equipment and Data Validation

The monitoring system would be attached to the existing Pacific Avenue Bridge which crosses the Ballona Creek channel, approximately one-half-mile upstream from the mouth of Ballona Creek. Manually executed trawling experiments would be executed to calibrate and validate the monitoring system’s measurements.

#### 3.2.6 Construction Characteristics

Construction of the Interceptor™ and trash boom moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the proposed Project; however, some excavation would be required on top of the existing jetties to expose clean stone to install the moorings.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 3.0 Project Description

The moorings would be 12 feet wide by 18 feet 4 inches long by 2 to 3 feet deep, with 1 foot of the depth being notched into the jetty. Approximately 0.113 acres of developed land would be disturbed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings.

The Project would involve minimal vehicle trips including material import/export as well as haul trucks required for construction.

**3.3 AVOIDANCE AND MINIMIZATION MEASURES****3.3.1 General Avoidance and Minimization Measures**

Construction associated with the Project will be limited to upland construction in an urbanized area, with no in-water construction proposed. The following avoidance and minimization measures will be incorporated into the proposed action to minimize the potential for adverse effects on federally listed species and other sensitive biological resources. With implementation of these measures, there will be no direct or indirect effects on federally listed species.

**AMM #1 – Prevention of Accidental Spills**

The Los Angeles County Public Works Construction Best Management Practice<sup>1</sup> for spill prevention and control (“WM-4”) will be implemented to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease). Refer to Appendix B.

**AMM #2 - Air Quality/Dust Control**

The Los Angeles County Public Works Construction Best Management Practice for wind erosion control (“WE-1”) will be implemented to minimize the potential for adverse effects from air quality/ dust control. Refer to Appendix B.

**AMM #3 – Prevention of Spread of Invasive Species**

Public Works will implement the following general measures to prevent the spread of invasive species:

- All equipment used for off-road construction activities shall be weed free prior to entering or leaving the action area.

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<sup>1</sup> The proposed action’s Construction Plans can be found in Appendix B. The Los Angeles County Public Works Construction Best Management Practices are detailed in the Los Angeles County Public Works Construction Site Best Management Practices Manual, which can be accessed at <https://dpw.lacounty.gov/CONS/SPECS/BMPMANUAL.PDF>.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 3.0 Project Description

**AMM #4 – General Measures for Protection of Special-Status Wildlife Species**

Public Works will implement the following general conservation measures to avoid or minimize the potential for adverse effects on special-status wildlife species:

- Construction access and equipment will be located on existing roads or previously disturbed parking areas.
- Disturbance of soil, vegetation, naturally occurring debris piles (including fallen trees or dead tree snags), rocky outcrops, and wildlife burrows will be avoided or minimized to the extent possible.
- To the extent practicable, all holes or trenches will be covered at the end of each workday to prevent wildlife from becoming trapped. All holes and trenches will be inspected before each workday to facilitate the release of any trapped wildlife. A qualified biologist will be consulted if work crews are unable to safely assist in the release of trapped wildlife.
- To minimize attractants to wildlife, trash will be stored in containers that can be closed and latched or locked to prevent access by wildlife. All loose trash will be cleaned up daily.

**3.3.2 Species-Specific Measures**

Public Works will implement the AMMs described below to avoid construction impacts on El Segundo blue butterfly, Palos Verdes blue butterfly, western snowy plover, southwestern willow flycatcher, California gnatcatcher, California least tern, and Least Bell's vireo. With implementation of these measures, and given the short duration of construction related activities, there will be no direct or indirect effects on these federally listed species; operation of the project is not expected to have direct or indirect impacts on these species.

- A qualified biologist knowledgeable of El Segundo blue butterfly, Palos Verdes blue butterfly, western snowy plover, southwestern willow flycatcher, California gnatcatcher, California least tern, and least Bell's vireo will provide a discussion of the species during the worker environmental awareness training which will take place prior to the start of construction. All construction personnel shall attend the worker environmental awareness training either in person or by watching a pre-recorded video prior to working on the project. The discussion will include how to identify the species, relevant life history and taxonomic information, where the species would be likely to occur in and around the action area, what to do if the species is observed, and the state and federal laws pertaining to the species.
- If feasible, construction activities will be scheduled to avoid the breeding season for special-status birds (breeding season is March 15 through September 30). If construction occurs outside of the breeding season, no further measures are necessary. If the nesting bird breeding season (breeding season is March 15 through September 30) cannot be completely avoided, then a qualified biologist will conduct a minimum of one pre-construction survey for nesting migratory birds within a 300-foot buffer around the location of construction activities for migratory birds. The



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 3.0 Project Description

survey will be conducted no more than 15 days before the initiation of construction. If an active nest is found, appropriate conservation measures (as determined by a qualified biologist) will be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

- If special-status animals are observed in the action area during construction activities, a qualified biologist will be immediately notified. As warranted, the qualified biologist may notify the USFWS about the species observed. All construction activities having the potential to effect special-status wildlife will be immediately stopped. The qualified biologist will evaluate the situation and will have authority to halt any construction activities until appropriate corrective measures have been implemented or it is determined that special-status species will not be harmed. The qualified biologist will remain in the area for the remainder of the workday to make sure that the species are not harmed. Any special-status wildlife encountered during construction activities will be allowed to move away from construction activities on their own. Capture and relocation is not permitted unless specifically approved in advance by the USFWS. Any dead or injured special-status wildlife will be immediately reported to the qualified biologist and the USFWS.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 4.0 Action Area

**4.0 ACTION AREA**

The action area for the proposed action encompasses approximately 102-acres and includes all areas proposed for disturbance and developments and all areas within approximately 500 feet (ft) where indirect impacts to federally listed species could occur (Figure 2). The boundary of the action area was determined from an understanding of the proposed action activities, site geography, topography, and hydrology and an understanding of the distribution, habitat requirements, and vulnerability of federal special-status species potentially occurring in the action area. The action area includes those areas of land, water, and air to be affected directly or indirectly by the Federal action and not only the immediate area involved in the action (50 C.F.R. §402.02).

**4.1 ENVIRONMENTAL BASELINE****4.1.1 Physical Conditions**

The action area is located in Ballona Creek in southwestern Los Angeles County. The action area is characterized by Ballona Creek, which is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap. The mouth of Ballona Creek empties into the Santa Monica Bay south of Marina del Rey and Venice Beach, and north of the community of Playa del Rey and Dockweiler Beach. The channel mouth is approximately 295 feet wide. The elevation of the channel’s bottom at the Project site ranges from -2.2 to +7.8 feet with respect to mean sea level.

The Ballona Creek watershed covers approximately 130 square miles within the Los Angeles Basin. With headwaters in the Santa Monica Mountains, the principal tributaries to the Ballona Creek are the Benedict Canyon Channel, Sepulveda Creek Channel, Centinela Creek Channel, and immense system of underground storm drains (ESA, 2017). Ballona Creek flows through the Ballona Wetlands Ecological Reserve (BWER) within the coastal plain of the Los Angeles Basin at an elevation of approximately 5 to 28 feet (USACE, 1999). The watershed upstream of the SA is approximately 20 percent undeveloped foothill and canyon area and 80 percent highly urbanized coastal plain, including the densely developed communities of Beverly Hills, Culver City, Hollywood, and a portion of the City of Los Angeles (USACE, 1999). The flood risk management channel provides support for approximately 1.5 million residents of the listed cities.

Habitat types of the action area include aquatic and mudflat habitats, tidal salt marsh, non-tidal wetland, unvegetated salt pan, and brackish marsh habitat; however, there is a lack of such habitats with the exception of the aquatic habitat within the action area (ESA 2017). Biological and marine surveys were conducted in February, March, and April of 2020 to determine the presence of biological resources in both the terrestrial and aquatic environments within and adjacent to the action area. According the marine



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 4.0 Action Area

resources survey conducted April 2020, the following marine habitats were present within the survey area: shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt with accumulated shell hash and debris; intertidal riprap revetment and bare rock with algae, barnacles, limpets, and snails; open water/water column habitat; and upland riprap revetment area (See Appendix C for the Marine Biological Technical Report). Sensitive marine habitats, such as eelgrass and kelp beds, were not observed within the survey area.

Non-native annual grasslands, stabilized dune habitat, a eucalyptus grove, and a coastal scrub habitat are present in the terrestrial action area, along with the surrounding community residential and commercial developments of Marina del Rey, Playa del Rey, Playa Vista, and Westchester.

**4.1.2 Habitat Communities**

Vegetation communities in the action area were classified based on habitat descriptions defined in the MCVII, *The Jepson Manual*, and the results of the biological resource surveys. Vegetation communities present include invasive monoculture, pickleweed mats alliance, ice plant mats alliance, dune mat alliance, open water, sandy beach, and disturbed and developed land covers. Vegetation communities and land cover types mapped within the action area are depicted on Figure 3.

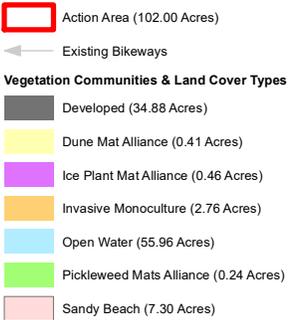
**Invasive Monoculture**

Approximately 2.76 acres of this community occurs within the action area, in the upland area of Ballona Creek and along the Del Rey Lagoon. In the Draft Environmental Impact Report for the Ballona Wetlands Restoration Project, invasive monoculture is described as follows:

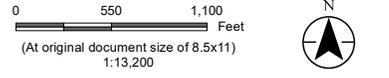
*...monocultures or very low-diversity assemblages of invasive herbs and shrubs including black mustard (*Brassica nigra*), crown daisy (*Glebionis coronaria*), wild radish (*Raphanus sativus*) ... pampas grass (*Cortaderia* spp.), carnation spurge (*Euphorbia terracina*), and castor bean (*Ricinus communis*). In addition, small, fragmented groups of non-native trees, primarily thorn tree and lollypop tree (*Myoporum laetum*), are included in this habitat type. Invasive monocultures are common across the BWER within many upland habitat types. However, they are most often located in areas with introduced fill (e.g., berms or upland fill areas). (ESA 2017)*

Within the action area, plant species observed within this community included black mustard, crown daisy, radish, pampas grass, and carnation spurge. Small Philippine acacia (*Acacia confusa*), Brazilian peppertree (*Schiuns terebinthifolia*), tree tobacco (*Nicotiana glauca*), sweet alyssum (*Lobularia maritima*), ribwort plantain (*Plantago lanceolata*), broadleaf plantain (*Plantago major*), shortpod mustard (*Hirschfeldia incana*), common sowthistle (*Sonchus oleraceus*), barley (*Hordeum* sp.), Bermuda buttercup (*Oxalis pes-caprae*), and fennel (*Foeniculum vulgare*) were also observed within this community.





**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Interceptor Centroid Coordinates: 33.962071, -118.455715  
 3. Data Sources: Stantec 2020.  
 4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Stantec**  
 Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-23, TR by ST on 2020-09-23, IR by CF on 2020-09-23  
 Client/Project: Los Angeles County Public Works, Ballona Creek Trash Interceptor Pilot Project Biological Assessment  
 184031268

Figure No. **3**

Title: **Vegetation Communities & Land Cover Types**

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 4.0 Action Area

**Pickleweed Mats Alliance**

Approximately 0.24 acres of this vegetation community occurs within the action area, primarily along the margins of the Del Rey Lagoon and banks of Ballona Creek. This alliance is represented within the action area by Pacific pickleweed (*Salicornia pacifica*) as the dominant species in the subshrub and herbaceous layers with algae and interspersed with iceplant (*Carpobrotus edulis*). This alliance is generally found to occur in coastal salt marshes and alkaline flats.

**Ice Plant Mats Alliance (*Mesembryanthemum* spp. - *Carpobrotus* spp. Herbaceous Semi-Natural Alliance)**

Approximately 0.46 acre of this vegetation community occurs within the action area along the margins of Del Rey Lagoon, the southern bank of Ballona Creek, and along the coastal sand dunes immediately south of the creek bordering a residential community. Within the action area, the alliance is represented by continuous stands of Chilean sea fig (*Carpobrotus chilensis*) and ice plant (*Carpobrotus edulis*) as the dominant species in the herbaceous layers. It is interspersed with occurrences of beach suncup (*Camissoniopsis cheiranthifolia*), European searocket (*Cakile maritima*), tree aeonium (*Aeonium arboreum*), cheeseweed mallow (*Malva parviflora*), and jade plant (*Crassula ovata*). This alliance is generally found to occur in bluffs, disturbed land, and sand dunes of immediate coastlines.

**Dune Mat Alliance (*Abronia latifolia* - *Ambrosia chamissonis* Herbaceous Alliance)**

Approximately 0.41 acre of this vegetation community occurs within the action area. It primarily occurs along the margins of Dockweiler State Beach and the jetty within the outer rocky outcrops of Ballona Creek and the sandy beach surfaces immediately south of the creek. Within the action area, this alliance is represented by silver burr ragweed (*Ambrosia chamissonis*) and European searocket (*Cakile maritima*) as the dominant species. Lesser sea-spurry (*Spergularia marina*), common stork's-bill (*Erodium cicutarium*), prostrate knotweed (*Polygonum aviculare*), and riggut brome (*Bromus diandrus*) are interspersed throughout this community. This alliance is generally found to occur in sand dunes of coastal bars, river mouths, and spits along the immediate coastline with coarse to fine-textured sands.

**Open Water**

Approximately 55.96 acres of open water habitat occurs in the Ballona Creek channel, Marina del Rey Harbor Main Channel, and Del Rey Lagoon within the action area. Within the action area, the Ballona Creek channel is a channelized system with a sediment bottom and embankments that are made of riprap with a grouted cap. The Marina del Rey Main Channel supports the passage of small and large watercrafts through the harbor. Del Rey Lagoon, a small coastal saline pond separated from Ballona Creek by a 40-foot-wide levee, has a manually controlled tidal gate, which exists at the north end of the lagoon and connects to a tidally influenced portion of Ballona Creek that enables periodic water exchange (MBC et al. 2016). The open water habitat is generally unvegetated, although a narrow fringe of herbaceous vegetation is occasionally present along the banks of Ballona Creek exposed during low tide.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 4.0 Action Area

**Sandy Beach**

Approximately 7.30 acres of the action area consist of the northern section of Dockweiler State Beach. This area is heavily disturbed and used as a recreational space, including a paved bicycle path that intersects the beach. The area is dominated by fine sands and is generally unvegetated due to the level of disturbance and its associated recreational and public use facilities.

**Developed**

This land cover type was used to map approximately 34.88 acres of the action area that are developed, including multi-unit residential buildings, paved and unpaved roadways and paths, a pedestrian bridge, the banks of Ballona Creek, the Ballona Creek North and South Jetties, landscaped areas, and developed recreational spaces. In general, these areas are unvegetated or contain ornamental vegetation, such as the areas surrounding Del Rey Lagoon and residential landscaped areas. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil. These include non-native grasses and forbs such as soft brome (*Bromus hordeaceus*), ripgut brome, Bermuda grass (*Cynodon dactylon*), and bristly ox tongue (*Helminthotheca echioides*).



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Assessment

4.0 Action Area

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

**5.0 FEDERALLY LISTED/PROPOSED SPECIES AND DESIGNATED CRITICAL HABITAT WITHIN ACTION AREA**

On September 24, 2020, an official list (Consultation Code 08ECAR00-2020-SLI-1614) of federal listed species and critical habitat with the potential to occur in the action area was obtained from the U.S. Fish and Wildlife (USFWS) (Appendix A). In addition, a site survey and literature review, which included a review of the California Department of Fish and Wildlife's California Natural Diversity Database (CDFW 2020), were used to further refine the list of federally listed species which may occur in the action area, prior to the site survey. Table 1 summarizes all federally listed species included on the USFWS list and those identified during site survey and literature review that have the potential to occur in the action area. For the purpose of this BA, which has been prepared to facilitate consultation concurrence for a may affect, but is not likely to adversely affect determination with the USFWS under Section 7 of the ESA, the following species have been identified as having the potential to occur in the action area and are further discussed below:

- El Segundo blue butterfly
- Palos Verdes blue butterfly
- western snowy plover
- southwestern willow flycatcher
- coastal California gnatcatcher
- California least tern
- least Bell's vireo

No federal proposed or candidate species will be affected by the proposed action. The action area is not within designated critical habitat for any federally listed species.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

**Table 1: Federally Listed Species Considered for the Ballona Trash Interceptor Project**

<b>Common Name Scientific Name</b>	<b>Status<sup>1</sup></b>	<b>General Habitat Description</b>	<b>Determination</b>	<b>Rationale</b>
<b>Invertebrates</b>				
El Segundo blue butterfly <i>Euphilotes battoides allyni</i>	FE	Historically ranged over the entire Los Angeles and El Segundo Dunes and the northwestern Palos Verdes Peninsula in southwestern Los Angeles County. Currently distributed on three remnant habitats within its former range supporting coastal sand dunes with coast buckwheat ( <i>Eriogonum parvifolium</i> ). All life stages depend on coast buckwheat and possibly loose sand.	<b>May affect, not likely to adversely affect</b>	The species' host plant was not observed within the action area, but occurrences have been mapped within the portions of the BWER less than 1 mile southeast of the action area (MBC et al. 2016). The species is known to occupy the southwestern portion of the BWER and was observed in 2013. The El Segundo Butterfly Recovery Unit covers the portions of Ballona west of State Route 1 to the ocean, which includes the action area (MBC et al. 2016). The nearest recorded CNDDDB occurrence is approximately 1.5 miles to the southeast of the action area.
Palos Verdes blue butterfly <i>Glaucopsyche lygdamus palosverdesensis</i>	FE	Dependent on two known larval hostplants, Santa Barbara milkvetch ( <i>Astragalus trichopodus</i> var. <i>lonchus</i> )—also known as locoweed—and common deerweed ( <i>Lotus scoparius</i> ) within coastal scrub habitat. Known only from the Palos Verdes peninsula.	<b>May affect, not likely to adversely affect</b>	One of the species of the two known larval host plants (common deerweed) was observed along the margins of the Del Rey lagoon within the action area; however, the nearest and most recently recorded CNDDDB occurrence is 6 miles south of the action area from 2001.
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	FE	Endemic to western Riverside, Orange, and San Diego Counties in areas of tectonic swales and earth slump basins in grassland and coastal sage scrub. Inhabits seasonally astatic pools filled by winter and spring rains. Hatches in warm water later in the season	No effect	No suitable habitat occurs within or adjacent to the action area.

## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Determination	Rationale
<b>Fish</b>				
Southern California DPS Steelhead <i>Oncorhynchus mykiss irideus</i> (pop. 10)	FE	Inhabits seasonally accessible rivers and streams with gravel for spawning. Requires sufficient flows in their natal streams to be able to return from oceans and lakes to spawn. Federal listing refers to populations from Santa Maria River south to the southern extent of the range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	No effect	No suitable spawning habitat occurs within the action area. The nearest recorded occurrence is approximately 4 miles upstream of Ballona Creek from 2008. May act as a transient passing through the action area.
<b>Birds</b>				
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	<b>May affect, not likely to adversely affect</b>	No suitable habitat occurs within the action area. The nearest and most recently recorded CNDDDB occurrence is within the action area; however, this observation was recorded more than 100 years ago.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	FE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S.	<b>May affect, not likely to adversely affect</b>	Although suitable nesting habitat is not present within the action area, foraging habitat is present within the BWER, which is located 0.1 mile east of the action area. The species may pass through the site in a transient capacity during migration. The nearest recorded CNDDDB occurrence is 8 miles northeast of the action area; however, this observation was recorded more than 120 years ago.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

<b>Common Name Scientific Name</b>	<b>Status<sup>1</sup></b>	<b>General Habitat Description</b>	<b>Determination</b>	<b>Rationale</b>
Coastal California gnatcatcher <i>Polioptila californica californica</i>	FE	Obligate, permanent resident of coastal sage scrub below 2500 feet in Southern California. Low, coastal sage scrub in arid washes and on mesas and slopes with California sagebrush ( <i>Artemisia californica</i> ) as a dominant or co-dominant species. Not all areas classified as coastal sage scrub are occupied.	<b>May affect, not likely to adversely affect</b>	No suitable nesting habitat occurs within the action area; however, the species was observed foraging within the BWER in 2011, well outside of the action area (ESA 2017). The nearest recorded CNDDDB occurrence is approximately 3 miles east of the action area; however, this observation was recorded about 40 years ago. Species may be observed foraging in or migrating through the action area.
California least tern <i>Sternula antillarum browni</i>	FE	Nests on sandy upper ocean beaches and open barren sites, and occasionally uses mudflats. Forages on adjacent surf line, estuaries, or the open ocean. Colonies are located near the ocean shoreline (within 0.5 mile [about 800 meters]), typically on nearly flat, loose sandy substrates with lightly scattered short vegetation and debris, although some colonies have been located on hard-packed surfaces, even unused asphalt. Colony sites must provide access to the shoreline for juveniles and must be relatively free of predators, or the colony may abandon breeding efforts before completion.	<b>May affect, not likely to adversely affect</b>	Although no nesting habitat occurs within the action area, there are known nesting sites 0.2 miles north of the action area in Venice Beach and within the eastern portion of the BWER, approximately one mile east of the action area (ESA 2017). The species is known to forage in Ballona Creek, Marina del Rey Harbor, and the BWER. The nearest recorded CNDDDB occurrence is approximately 0.2 mile to the east of the action area; however, this observation was more than 30 years ago.

**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Determination	Rationale
Least Bell's vireo <i>Vireo bellii pusillus</i>	FE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Often inhabits structurally diverse woodlands along watercourses including cottonwood-willow and oak woodlands and mulefat scrub. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	<b>May affect, not likely to adversely affect</b>	The species is known to nest and forage in the BWER and has been recorded in the Playa Vista riparian corridor near the action area in 2010; however, no individuals were observed within the action area at that time (ESA 2017). The nearest and most recently recorded CNDDDB occurrence is 1 mile northeast of the action area from 2014. Suitable nesting habitat occurs in the BWER approximately 0.4 mile northeast of the action area.
<b>Plants</b>				
Marsh sandwort <i>Arenaria paludicola</i>	FE	Marshes and swamps (fresh water or brackish); sandy substrates; found in open habitats. Elevation: 3–170 m. Blooms: March–August	No effect	Marginally suitable habitat occurs within the portion of the action area that includes the Del Rey Lagoon. The nearest and most recently CNDDDB recorded occurrence is 7 miles northeast of the action area from more than 120 years ago. Del Rey Lagoon would not be impacted by the project.
Braunton's milk-vetch <i>Astragalus brauntonii</i>	FE	Chaparral, valley grasslands, coastal sage scrub, closed-cone pine forest. Occurs in disturbed habitat and requires gravelly clay soils. Elevation: 4–60 m Blooms: August–October	No effect	No suitable habitat occurs within the action area. The nearest recorded CNDDDB occurrence is 7 miles northwest of the action area from more than 90 years ago.
Ventura Marsh milk-vetch <i>Astragalus pycnostachyus var. lanosissimus</i>	FE	Coastal dunes, coastal scrub, marshes, and swamps (edges, coastal salt, or brackish). Elevation: 1–35 m Blooms: January–August	No effect	There is marginally suitable habitat in the Del Rey Lagoon within the action area. The nearest and most recently recorded CNDDDB occurrence is approximately 0.5 mile north of the action area from more than 30 years ago. Del Rey Lagoon would not be impacted by the project.



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## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

<b>Common Name Scientific Name</b>	<b>Status<sup>1</sup></b>	<b>General Habitat Description</b>	<b>Determination</b>	<b>Rationale</b>
Coastal dunes milk-vetch <i>Astragalus tener</i> <i>var. titi</i>	FE	Coastal bluff scrub (sandy), coastal dunes, and coastal prairie (mesic). Often in vernally mesic areas. Elevation: 1–50 m Blooms: March–May	No effect	No suitable habitat occurs within the action area. The nearest and most recently recorded CNDDDB occurrence is 3 miles northwest of the action area; however, this observation was recorded more than 90 years ago.
Salt marsh bird's- beak <i>Chloropyron</i> <i>maritimum ssp.</i> <i>maritimum</i>	FE	Coastal dunes, marshes and swamps (coastal salt). Elevation: 0–30 m Blooms: May–October	No effect	Marginally suitable habitat occurs in the Del Rey Lagoon within the action area. The nearest and most recent recorded CNDDDB occurrence is 2 miles northeast of the action area; however, this observation was recorded more than 110 years ago. Del Rey Lagoon would not be impacted by the project.
San Fernando Valley spineflower <i>Chorizanthe parryi</i> <i>var. fernandina</i>	FC	Annual; sandy areas in coastal scrub and native grasslands; Los Angeles and Ventura Counties. Elevation: 150–1220 m Blooms: April–July	No effect	A very small amount of marginally suitable habitat occurs near the Del Rey Lagoon within the eastern portion of the action area. The nearest and most recently recorded CNDDDB occurrence is within the action area; however, this observation was recorded more than 110 years ago. Suitable habitat would not be impacted by the project.
San Diego button- celery <i>Eryngium</i> <i>aristulatum var.</i> <i>parishii</i>	FE	Coastal scrub, valley and foothill grassland, and vernal pools. California to Baja. Elevation: 20–620 m Blooms: April–June	No effect	A very small amount of marginally suitable habitat occurs within the eastern portion of the action area in the BWER. The nearest and most recently recorded CNDDDB occurrence is 4 miles southeast of the action area; however, this observation was recorded more than 110 years ago. Marginally suitable habitat would not be impacted by the project.

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## Biological Assessment

## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

<b>Common Name Scientific Name</b>	<b>Status<sup>1</sup></b>	<b>General Habitat Description</b>	<b>Determination</b>	<b>Rationale</b>
Gambel's water cress <i>Nasturtium gambelii</i>	FE	Marshes and swamps (freshwater or brackish). Elevation: 5–330 m Blooms: April–October	No effect	A very small amount of marginally suitable habitat occurs along the Del Rey Lagoon within the action area. The nearest and most recently recorded CNDDDB occurrence is 7 miles northeast of the action area from more than 110 years ago. Del Rey Lagoon would not be impacted by the project.
Spreading navarretia <i>Navarretia fossalis</i>	FT	Marshes and swamps (assorted shallow freshwater), playas, vernal pools, and Cheonopod scrub. Elevation: 30–655 m Blooms: April–June	No effect	Suitable habitat does not occur with the action area. The nearest and most recently recorded CNDDDB occurrence is approximately 5 miles east of the action area; however, this observation was recorded more than 110 years ago.
California Orcutt grass <i>Orcuttia californica</i>	FE	Occurs only in large and deep vernal pools. Clay soils with an impervious subsurface layer and longer inundation periods. Elevation: 15–660 m Blooms: April–August	No effect	Suitable habitat does not occur with the action area. The nearest and most recently recorded CNDDDB occurrence is approximately 9 miles to the southeast of the action area from more than 40 years ago.

## Notes:

1. Status Codes: Federal Endangered (FE), Federal Threatened (FT); Federal Candidate (FC)

DPS = Distinct Population Segment

m = meters



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5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

## 5.1 DISCUSSION OF EL SEGUNDO BLUE BUTTERFLY AND PALOS VERDES BLUE BUTTERFLY

### 5.1.1 Legal Status and Distribution

USFWS formally listed El Segundo blue butterfly as endangered under the ESA on June 8, 1976 (41 Federal Register [FR] 22041 22044). Critical habitat was designated for the species in 1977. (42 FR 7972 7976).

USFWS formally listed Palos Verdes blue butterfly as endangered under the ESA on July 2, 1980 (45 FR 44939 44942). Critical habitat was also designated for the species at the same time. In 2014, USFWS conducted a 5-year review of the biological status of the Palos Verdes blue butterfly, and concluded that the species should remain listed as federally endangered (USFWS 2014).

Both butterfly species are endemic to southern California. The historic range of the El Segundo blue butterfly included the Los Angeles and El Segundo Dunes and the northwestern Palos Verdes Peninsula in southwestern Los Angeles County. The current range is in two main pockets along the coast. The first occurs from Rancho Palos Verdes north to Santa Monica and the second is in the Vandenberg Air Force Base area southwest of Santa Maria. The Palos Verdes blue butterfly is typically found along the coast west of Long Beach and North of Santa Monica.

### 5.1.2 Life History and Habitat Requirements

Butterflies have four life stages: egg, larva, pupa, and adult. The El Segundo blue butterfly depends on coast buckwheat (*Eriogonum parvifolium*) for all life stages. Coast buckwheat is found in coastal sand dune habitat. The adult stage of El Segundo blue butterfly typically ranges from 4 days to 2 weeks and typically ranges from mid-June to early September (USFWS 2008). Adults feed on coast buckwheat pollen and nectar, and mate and lay eggs on the flowers. The eggs hatch in 3 to 5 days. During the larval or caterpillar stage, individuals remain concealed within flower heads and primarily eat the seeds of coast buckwheat. When individuals undergo pupation (change from larval to pupal stage), they fall to the ground and remain buried either underground or in the leaf litter at the base of the coast buckwheat until they emerge as adult butterflies. This pupal or cocoon stage lasts for one or more years.

The Palos Verdes blue butterfly is dependent on two larval host plants, Santa Barbara milkvetch (*Astragalus trichopodus* var. *lonchus*) and common deerweed (*Lotus scoparius*), within coastal scrub habitat. The adult stage of Palos Verdes blue butterfly correlates to hostplant flowering and typically occurs between late January and early May (USFWS 2014). They lay eggs throughout their adult stage on the flowers or leaves of both host plants.

### 5.1.3 Survey Results

No coast buckwheat, the host plant for the El Segundo blue butterfly, was observed within the action area during the 2020 field surveys. However, the species is known to occupy the southwestern portion of the



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

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## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

BWER. In addition, the El Segundo Butterfly Recovery Unit covers portions of the BWER, west of State Route 1 to the ocean, which includes the action area (MBC et al. 2016). The nearest recorded CNDDDB occurrence is approximately 1.5 miles to the southeast of the action area.

Occurrences of common deerweed, the host plant for Palos Verdes blue butterfly, have been mapped within the portions of the BWER less than 1 mile southeast of the action area (MBC et al. 2016). Common deerweed was observed along the margins of the BWER within the action area during the 2020 surveys. The nearest and most current recorded CNDDDB occurrence is 6 miles south of the action area from 2001.

Both butterfly species have the potential to occur within the action area when dispersing between habitat patches.

**5.2 DISCUSSION OF WESTERN SNOWY PLOVER****5.2.1 Legal Status and Distribution**

USFWS formally listed the western snowy plover as threatened under the ESA on March 5, 1993 (60 FR 10695 10715). Critical habitat was designated for the species in 1999. (64 FR 68508 68544) and revised in 2012 (77 FR 36727 36869). In 2019, USFWS conducted a 5-year review of the biological status of the western snowy plover, and concluded that the species should remain listed as federally threatened (USFWS 2019c).

The western snowy plover is both a year-round resident and migratory species with breeding range extending along the Pacific coastline from southern Baja California north into southern Washington. The nearest designated critical habitat for western snowy plover (*Charadrius alexandrinus nivosus*) is less than one mile to the south of the action area.

**5.2.2 Life History and Habitat Requirements**

The western snowy plover breeds primarily on coastal beaches located on sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Nests are typically in areas that are open and flat with sparse vegetation or driftwood cover. Nests are often located within 100 meters of the water, but may occur up to several hundred meters away in the absence of vegetative barriers between nest sites and the water (USFWS 2007). The western snowy plover forages for invertebrates in both the wet sand in the intertidal zone and dry sand above the high tide. Migratory birds typically arrive on their nesting grounds in California between March to late April, with some arriving as early as January, and nesting takes place between March and September (USFWS 2007). Some individuals will nest at more than one location in a year, which can extend arrival into June.



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### 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

#### 5.2.3 Survey Results

Based on existing habitat conditions, western snowy plover is not expected to nest within the action area. However, given the location of designated critical habitat less than one mile away on a contiguous beach, there is a potential for the species to forage within the area, or to occur as a migratory transient.

## 5.3 DISCUSSION OF SOUTHWESTERN WILLOW FLYCATCHER

### 5.3.1 Legal Status and Distribution

USFWS formally listed the southwestern willow flycatcher as endangered under the ESA on February 27, 1995 (60 FR 10695 10715). Critical habitat was designated for the species in 2013. (78 FR 344 534). In 2017, USFWS conducted a 5-year review of the biological status of the southwestern willow flycatcher, and concluded that the species should remain listed as federally endangered (USFWS 2017).

The southwestern willow flycatcher is a neotropical migrant, spending winters in southern Mexico and Central and South America. The breeding range includes portions of southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. Their migration corridor is not well known.

### 5.3.2 Life History and Habitat Requirements

The southwestern willow flycatcher breeds in patchy to dense riparian areas along streams or other wetlands, typically with surface water or saturated soil present. Sizes of the riparian habitat patches range from 0.25 acre to 175 acres. Nest locations are often found in smaller patches of riparian habitat due to widespread habitat fragmentation. Nesting habitat is typically comprised of willows (*Salix* spp.), mulefat (*Baccharis* spp.), boxelder (*Acer negundo*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Elaeagnus angustifolia*). Southwestern willow flycatchers forage for small to medium flying insects, catching them while flying, hovering to glean them from foliage, and occasionally capturing them on the ground. Southwestern willow flycatchers typically arrive on their breeding grounds around late April to early May, begin nesting soon after arrival, and migrate south for the winter as early as late July into September (USFWS 2002).

### 5.3.3 Survey Results

No suitable nesting habitat was observed within the action area during the biological surveys conducted by Stantec in 2020. However, suitable foraging habitat was observed within the BWER located 0.1 mile east of the action area. The nearest recorded CNDDDB occurrence is approximately 8 miles northeast of the action area and was recorded more than 120 years ago. Although no suitable nesting habitat occurs within the action area, with the proximity of foraging habitat nearby, southwestern willow flycatcher could potentially pass through and utilize the action area for foraging during migration.



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5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

## 5.4 DISCUSSION OF COASTAL CALIFORNIA GNATCATCHER

### 5.4.1 Legal Status and Distribution

USFWS formally listed the coastal California gnatcatcher as threatened under the ESA on March 30, 1993 (58 FR 16741 16757). Critical habitat was designated for the species in 2000 (65 FR 63680 63743) and revised in 2007 (72 FR 72010 72213). In 2020, USFWS conducted a 5-year review of the biological status of the coastal California gnatcatcher, and concluded that the species should remain listed as federally threatened (USFWS 2020a).

The coastal California gnatcatcher is a year-round resident in coastal southern California from Santa Barbara south into Mexico.

### 5.4.2 Life History and Habitat Requirements

The coastal California gnatcatcher breeds in coastal sage scrub below 2,500 feet in Southern California. The coastal California gnatcatcher is typically found in arid washes and on mesas and slopes with California sagebrush (*Artemisia californica*) as a dominant or co-dominant species. Coastal California gnatcatchers forage for insects, gleaning them from foliage and branches and occasionally hovering.

### 5.4.3 Survey Results

No suitable nesting habitat was observed within the action area during biological surveys in 2020. However, the species was previously observed foraging within a portion of the BWER that is outside of the action area (ESA 2017). The nearest recorded CNDDDB occurrence is approximately 3 miles east of the action area and was recorded about 40 years ago. Although no suitable nesting habitat occurs within the action area, given the documented foraging behavior nearby, coastal California gnatcatcher could potentially utilize the action area for foraging.

## 5.5 DISCUSSION OF CALIFORNIA LEAST TERN

### 5.5.1 Legal Status and Distribution

USFWS formally listed the least tern as endangered under the ESA on June 2, 1970 (35 FR 8491 8498). Critical habitat has not been designated for this species. In 2020, USFWS conducted a 5-year review of the biological status of the California least tern, and concluded that the species should remain listed as federally endangered (USFWS 2020b).

The California least tern is a neotropical migrant, spending winters in Central America and northern South America. The breeding range includes coastal California, from the San Francisco Bay south to Mexico. Their migration corridor is not well known.



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#### 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

##### **5.5.2 Life History and Habitat Requirements**

California least tern nests in colonies on sandy upper ocean beaches and open, barren sites, occasionally using mudflats where access to the shoreline is present and relatively free of predators. Nest colonies are typically located within about 0.5 mile of water on nearly flat, loose, sandy substrates with lightly scattered, short vegetation and debris. Some nesting colonies have been documented on hard-packed surfaces, including unused asphalt. California least terns forage for small fish, shrimp, and other invertebrates along the adjacent surf line, estuaries, or the open ocean.

California least terns typically arrive on their breeding grounds around late April; with courtship beginning immediately; they migrate south for the winter in August. Nesting season extends from mid-May into early August. Prior to the incubation period, the birds will establish nocturnal roosting sites which are in a different location from where they will eventually lay their eggs. Nocturnal roost sites may be located anywhere from 0.25 mile to 10 miles from their nesting locations (USFWS 1980). Once incubation begins, nocturnal roosting takes place at the incubation site.

##### **5.5.3 Survey Results**

No suitable nesting habitat was observed within the action area during biological surveys in 2020. However, known nesting sites occur within the eastern portion of the BWER and north of the action area in Venice Beach, approximately 0.2 miles north and 1 mile northeast of the action area, respectively. California least tern commonly forages in Ballona Creek, Marina del Rey Harbor, and the BWER. The nearest recorded CNDDDB occurrence of a nesting colony is approximately 0.2 miles north of the action area in Venice Beach and was recorded more than 30 years ago.

Although no suitable nesting habitat occurs within the action area, given the documented foraging behavior nearby, California least tern could potentially utilize the action area for foraging and night roosting.

## **5.6 DISCUSSION OF LEAST BELL'S VIREO**

### **5.6.1 Legal Status and Distribution**

USFWS formally listed the least Bell's vireo as endangered under the ESA on May 2, 1986 (51 FR 16474 16482). Critical habitat was designated for the species in 1994. (59 FR 4845 4867). In 2006, USFWS conducted a 5-year review of the biological status of the least Bell's vireo, wherein the species remains listed as federally endangered (USFWS 2006).

The least Bell's vireo is a neotropical migrant, spending winters in southern Mexico and Central and South America. The breeding range includes portions of southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. Their migration corridor is not well known.



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## 5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

**5.6.2 Life History and Habitat Requirements**

The least Bell's vireo is a summer resident of Southern California in low riparian habitat in the vicinity of water or in dry river bottoms below 2,000 feet. It often inhabits and breeds in structurally diverse woodlands along watercourses including cottonwood-willow and oak woodlands and mulefat scrub (USFWS 1998). Cup nests are typically located along margins of bushes or on twigs projecting into pathways, often willow, Baccharis, or mesquite. Least Bell's vireos forage for insects, gleaning them from branches and leaves. They typically start arriving on their breeding grounds between mid-March to early April and are present on the breeding grounds through late September.

**5.6.3 Survey Results**

No suitable nesting habitat was observed within the action area during biological surveys in 2020. However, the species is known to nest and forage in the BWER and has been recorded in the Playa Vista riparian corridor near the action area in 2010 (ESA 2017). The nearest recorded CNDDDB occurrence is approximately one mile northeast of the action area and was recorded in 2014.



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5.0 Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

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6.0 Effects of the Proposed Action

## 6.0 EFFECTS OF THE PROPOSED ACTION

Direct effects occur when federally listed animal species are physically impacted by the proposed action activities. Indirect effects, both positive and negative, affect federally listed animal species by causing changes in hydrology, canopy cover and generally causing human disturbance. Under the National Environmental Policy Act (42 U.S.C. § 4321 et seq. and implementing regulations), cumulative effects analysis considers spatial and temporal effects resulting from the incremental impact of a proposed action when added to past, present, and reasonably foreseeable future actions and natural processes occurring within the action area. Sources for cumulative impacts may include state, Tribal, local and private actions, as well as other activities in the Ballona Creek channel. (See 40 C.F.R. § 1508.7) Spatial effects are those that occur over the distribution of a species, or a population of a species. Temporal effects include past, present, and likely future effects on federally listed species over time. Adherence to the current management direction outlined for habitat within Ballona Creek is intended to eliminate or reduce possible negative cumulative impacts. Future actions that result in a federal action that would be subject to the consultation requirements established in Section 7 of the ESA are also described.

Due to the lack of suitable habitat within the action area and with the implementation of the AMMs described under Section 3.3 above, the proposed action would not adversely affect El Segundo blue butterfly, Palos Verdes blue butterfly, southwestern willow flycatcher, California gnatcatcher, California least tern, or Least Bell's vireo.

The following discussion identifies interrelated, and interdependent, and cumulative effects that are reasonably foreseeable through the implementation of the proposed action.

### 6.1 INTERRELATED AND INTERDEPENDENT EFFECTS

Interrelated and interdependent actions are those that have no significant independent utility apart from the action under consideration or are part of a larger action and depend on the larger action for their justification (i.e., this action or other actions would not occur “but for” this larger action). No such actions are associated with the proposed action, and there would not be any interrelated or interdependent effects.

### 6.2 CUMULATIVE EFFECTS

Cumulative effects are those impacts of future, state, local, and private actions affecting endangered and threatened species that are reasonably certain to occur in the action area. Future actions that result in a federal action would be subject to the consultation requirements established in Section 7 of the ESA and, therefore, are not considered cumulative to the proposed action. No reasonably foreseeable future actions within the proposed action area are known at this time.



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6.0 Effects of the Proposed Action

### **6.3 SPECIES AND CRITICAL HABITAT DETERMINATION**

AMMs have been incorporated into the project to protect water quality, minimize fugitive dust emissions, prevent the introduction of invasive plant species, and protect special-status wildlife. With implementation of the AMMs and project-specific mitigation measures presented in this BA, and considering the general beneficial environmental effects related to the removal of plastic as a result of this project, the project would have the following determinations:

- may affect, but is not likely to adversely affect the El Segundo blue butterfly
- may affect, but is not likely to adversely affect the Palos Verdes blue butterfly
- may affect, but is not likely to adversely affect the western snowy plover
- may affect, but is not likely to adversely affect the southwestern willow flycatcher
- may affect, but is not likely to adversely affect the coastal California gnatcatcher
- may affect, but is not likely to adversely affect the California least tern
- may affect, but is not likely to adversely affect the least Bell's vireo



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## 7.0 References

**7.0 REFERENCES**

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**Appendix A U.S. FISH AND WILDLIFE SERVICE OFFICIAL  
SPECIES LIST**



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
 Carlsbad Fish And Wildlife Office  
 2177 Salk Avenue - Suite 250  
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 Phone: (760) 431-9440 Fax: (760) 431-5901  
<http://www.fws.gov/carlsbad/>



In Reply Refer To:  
 Consultation Code: 08ECAR00-2020-SLI-1614  
 Event Code: 08ECAR00-2020-E-03758  
 Project Name: Ballona Creek Trash Interceptor Pilot Project

September 24, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Carlsbad Fish And Wildlife Office**

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

## Project Summary

Consultation Code: 08ECAR00-2020-SLI-1614

Event Code: 08ECAR00-2020-E-03758

Project Name: Ballona Creek Trash Interceptor Pilot Project

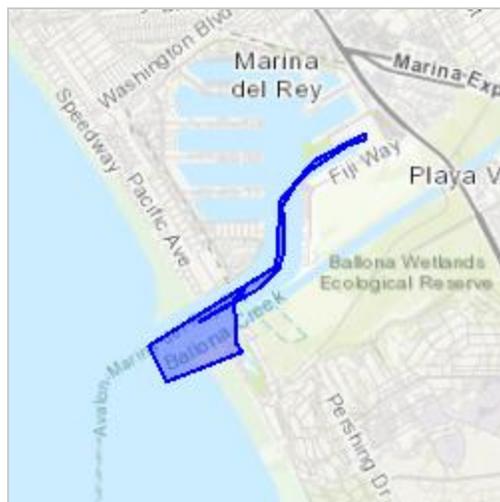
Project Type: \*\* OTHER \*\*

**Project Description:** Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup (TOC) to construct and operate the Ballona Creek Trash Interceptor™ Pilot Project (proposed action) located in the City of Los Angeles. The purpose of the proposed action is to test the efficiency of the TOC's Interceptor™ in minimizing trash and debris within Ballona Creek from entering Santa Monica Bay, as well as to track the amount of floatable debris that flows into Santa Monica Bay. The proposed action would provide a secondary measure for trash removal by installing a floating trash Interceptor™ near the mouth of Ballona Creek, directly south and east of the Marina del Rey harbor entrance and breakwater near the Pacific Ocean shoreline.

The action area includes the vicinity where the vessel will be constructed as well as location of permanent operation. Construction is anticipated to take six months to complete.

### Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/33.968775555000065N118.44841236879262W>



Counties: Los Angeles, CA

## Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Birds

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Coastal California Gnatcatcher <i>Polioptila californica californica</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8178">https://ecos.fws.gov/ecp/species/8178</a>	Threatened
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5945">https://ecos.fws.gov/ecp/species/5945</a>	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened

## Insects

NAME	STATUS
<p>El Segundo Blue Butterfly <i>Euphilotes battoides allyni</i> There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3135">https://ecos.fws.gov/ecp/species/3135</a></p>	Endangered

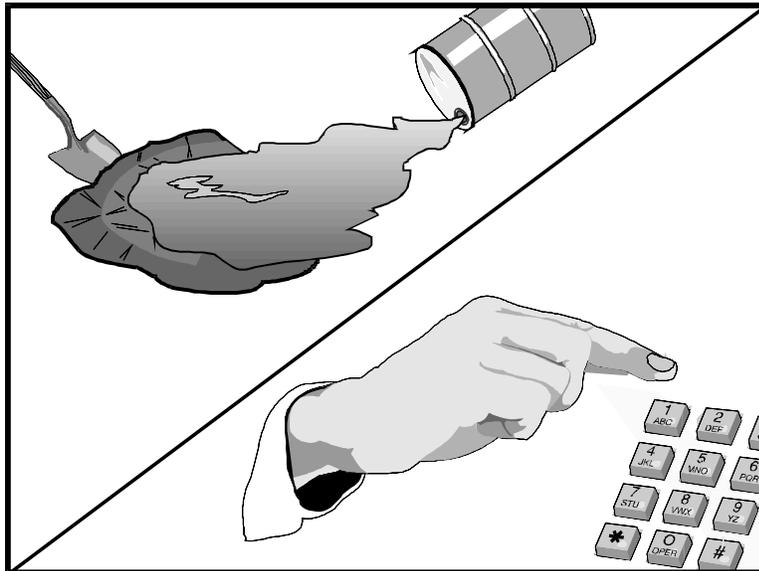
## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

**Appendix B CONSTRUCTION BEST MANAGEMENT PRACTICES**

# Spill Prevention and Control

WM-4



Standard Symbol

### BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

**Definition and Purpose** These procedures and practices are implemented to prevent, control and clean-up spills in a manner that minimizes or prevents the discharge of spilled material to the permeable or impermeable ground surface, drainage system or watercourses.

**Appropriate Application** This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime liquids or dry materials or wastes (including chemicals, hazardous or non-hazardous substances) are stored or used onsite. Substances may include, but are not limited to:

- Soil stabilization products/binders.
- Dust Palliatives.
- Herbicides/Pesticides, Fertilizers
- Deicing/anti-icing chemicals.
- Sanitary wastes
- Fuels, Lubricants, Other petroleum distillates
- Paint solvents and thinners
- Vehicle fluids
- Asphalt and Portland Cement products

# Spill Prevention and Control

WM-4
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- Limitations**
- Procedures and practices presented in this BMP are general. The Contractor shall identify appropriate practices for the specific materials or wastes used or stored on-site.
- Standards and Specifications**
- Spills of materials and wastes shall be contained and cleaned up immediately.
  - Spills identified during a rain event shall be covered and protected from storm water run-until they can be cleaned up.
  - Spills shall not be buried, or washed or cleaned up with water.
  - Water shall not be used to clean up spills. Dry methods such as rags and absorbents shall be used. Water used for decontaminating sampling equipment shall not be allowed to enter storm drains or watercourses and shall be collected.
  - All collected spill cleanup waste shall be disposed of in accordance with BMP WM-6, "Hazardous Waste Management."
  - Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
  - Proper storage, clean-up and spill reporting instruction for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
  - Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.

## ***Education***

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to train new employees.
- The Contractor shall oversee and enforce proper spill prevention and control measures and shall ensure appropriate personnel are assigned and trained for spill cleanup.



# Spill Prevention and Control

WM-4
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## ***Cleanup and Storage Procedures***

- Equipment and materials for cleanup of spills shall be available on site and spills and leaks shall be cleaned up immediately and disposed of properly.
- Sewage pipeline breaks or spills shall be handled in accordance with the contract special provisions, if applicable. The required plan for sewage spills shall be referenced and described in Section 500.4.6 of the SWPPP, if applicable.
- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills. Water shall not be used to clean up spills. Do not bury the spill or spilled materials.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.
- Semi-Significant Spills
  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
  - Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Engineer.
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.



# Spill Prevention and Control

WM-4
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## ■ Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:
- Notify the Engineer immediately and follow up with a written report.
- Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site. The Los Angeles County Fire Department Health Hazardous Material Division should be called at (323)890-4317 or after hours Call: 911 or (323)881-2455 (Health Haz Mat).
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 117.3 and 302.4, the contractor shall notify the National Response Center at (800) 424-8802.
- The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff has arrived at the job site.
- Other agencies which may need to be consulted include, but are not limited to, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, RWQCB, etc.

## ***Disposal Procedures***

- Proper disposal is disposal offsite in accordance with all applicable laws and regulations.
- Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of in accordance with WM-6, "Hazardous Waste Management" BMPs.
- Waste that is not hazardous and is not defined as waste that requires special handling under California Code of Regulations, Title 22 Division 4.5, Title 23, Division 3, Chapter 3, and Title 27, Division 2, Subdivision 1 shall be disposed of in accordance WM-5 Solid Waste Management.

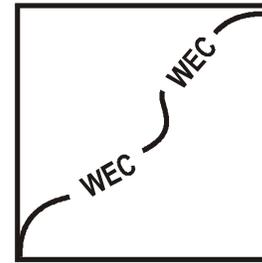
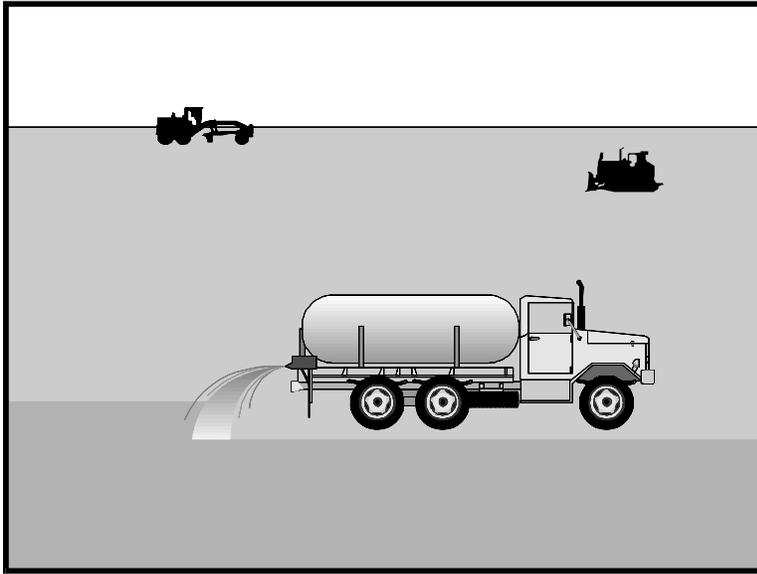
## Maintenance and Inspection

- Inspect the project site for spills daily and document weekly, and before and after every rainfall events. During extended rainfall events, inspect project site for spills at least once every 24 hours.
- Verify that spill control clean-up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plan and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.



# Wind Erosion Control

WE-1



Standard Symbol

### BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

**Definition and Purpose** Wind erosion control consists of applying water and/or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind. Covering of all stockpiles is required year round.

**Appropriate Applications** This practice is implemented on all exposed soils subject to wind erosion.

- Standards and Specifications**
- Effective wind erosion control shall be implemented.
  - Implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.
  - Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
  - All distribution equipment shall be equipped with a positive means of shutoff.
  - Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the project.
  - If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked "NON-POTABLE WATER - DO NOT DRINK."
  - Soil stabilization BMPs are also effective as wind erosion control (SS-3, SS-4, SS-5, SS-6, SS-7, and SS-8).



# Wind Erosion Control

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**WE-1**

- Maintenance and Inspection**
- Inspect wind erosion control measures daily and document weekly.
  - Check areas that have been protected to ensure coverage and effectiveness of Wind erosion controls. If wind erosion or dust are observed, Contractor shall immediately reapply or implement additional wind erosion control BMPs.





CADD PROJECT FILE NAME  
 BALLONA CREEK TRASH.DGN  
 CHECKER  
 R. LUI  
 DESIGNER  
 R. LUI  
 DRAFTER  
 R. LUI / C. RAVE

**INDEX TO PROJECT PLANS**

SHEET NO.	DESCRIPTION
1	SITE PLAN
2-3	PLAN AND PROFILE
4-5	TYPICAL JETTY ANCHOR DETAILS
6	MOUNT DETAILS
7	BMP NOTES

**REFERENCES**

SURVEY FIELD NOTES: FCFB 3400 PAGES 89 - 101  
 LACPW CONSTRUCTION SITE BMP MANUAL (2010)

**STANDARD PLANS**

SPPWC, 2012 EDITION	DESCRIPTION
100-2	TOPOGRAPHY SYMBOLS AND STD ABBR
134-2	CONCRETE PAVEMENT JOINT DETAILS
606-4	METAL HAND RAILINGS

**CONSTRUCTION NOTES**

- EXISTING STONE JETTY RIPRAP SHALL BE REMOVED TO DEPTH(S) SPECIFIED ON SHEETS 2 AND 3 OF THE PLANS. ALL DELETERIOUS DEBRIS/MATERIAL SHALL BE REMOVED TO EXPOSE CLEAN STONE. VOIDS WITHIN RIPRAP SHALL BE FILLED WITH MATERIAL OF VARIOUS GRADATIONS (GRAVEL AND COBBLES RANGING FROM 2 INCHES TO 6 INCHES) AND COMPACTED WITH HAND OPERATED EQUIPMENT PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL REFER TO SPPWC 134 FOR CONCRETE JOINT DETAILS.
- METAL HAND RAILINGS SHOWN ARE FOR SCHEMATIC PURPOSES ONLY. METAL HAND RAILINGS SHALL BE PER SPPWC 606 TYPE B AND SHALL BE STAINLESS STEEL OR OTHER CORROSION-RESISTANT MATERIAL TO BE APPROVED BY THE AGENCY. ANCHOR RING, STEEL PLATE, AND ASSOCIATED HARDWARE SHALL BE STAINLESS STEEL.
- ZINC ANODES SHALL BE PLACED AT 24" OC IN BOTH DIRECTIONS. EACH ANODE SHALL HAVE A MINIMUM OF 5.64 OUNCES OF ZINC MASS.
- STUD CHAIN LINK MOORING LINE, FLOATING TRASH BOOMS, AND TRASH CAPTURE DEVICE TO BE INSTALLED BY OTHERS.



BENCH MARK	
PT 501	NAVD 88' NGS BM DY1289
1" DPW COPPER DISK IN CONC	FCFB 3400 PG 92 EL = 12.17
N = 1,808,997.4667	
E = 6,423,312.4058	

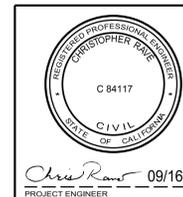
BENCH MARK	
PT 505	LONG BEACH (CITY) 2014
1" DPW COPPER DISK IN ROCK	NGVD 29 1929
N = 1,808,901.4189	FCFB 3400 PG 96
E = 6,423,840.5513	EL = 11.49

**NON-STANDARD ABBREVIATIONS**

ABBREVIATION	ABBREVIATIONS
ABBR	ABBREVIATIONS
BMP	BEST MANAGEMENT PRACTICE
ESCB	EROSION AND SEDIMENT CONTROL BARRIER
FCFB	FLOOD CONTROL FIELD BOOK
FT	FEET
HOR	HORIZONTAL
LT	LEFT
RT	RIGHT
SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
STA	STATION
VERT	VERTICAL

**LEGEND**

- STUD LINK CHAIN MOORING LINE
- - - FLOATING TRASH BOOM



LOS ANGELES COUNTY PUBLIC WORKS

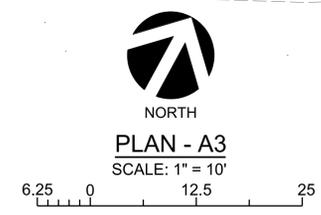
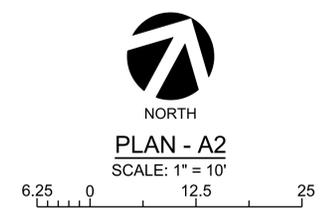
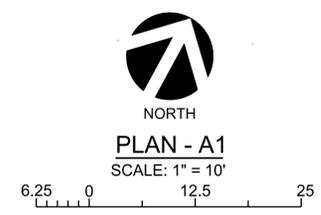
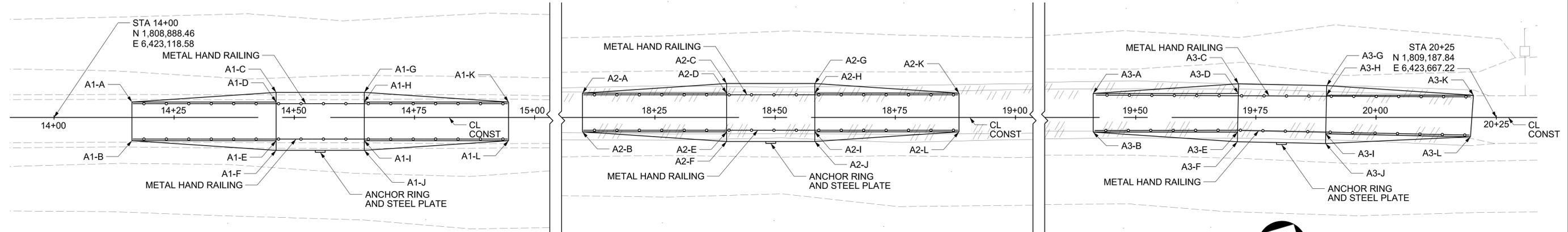
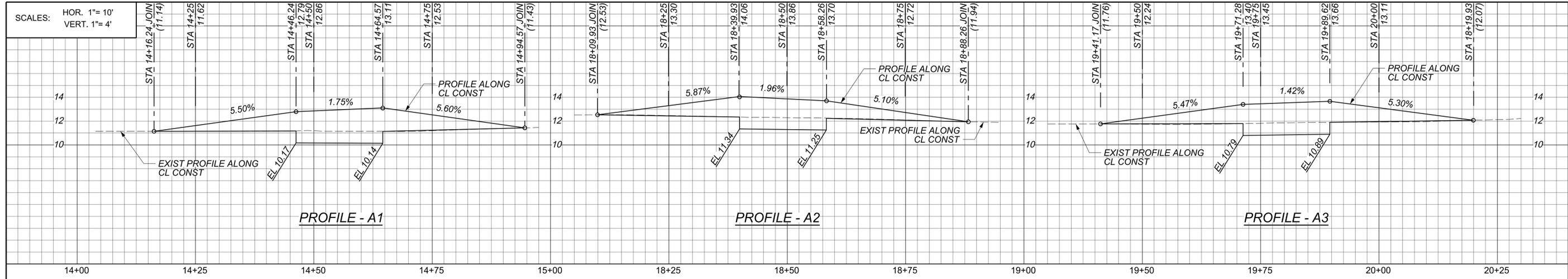
**BALLONA CREEK**  
TRASH INTERCEPTOR PILOT PROJECT

SITE PLAN

PROJECT ID NO. FCC0001350

LACFCD INDEX NO. 17-D117.1

SHEET 1 OF 7



POINT	STATION	OFFSET FT	FG ELEV
A1-A	14+16.24	3.18' LT	(10.95)
A1-B	14+16.24	4.82' RT	(11.10)
A1-C	14+46.24	5.18' LT	12.57 TOP, (10.74) TOE
A1-D	14+46.24	3.18' LT	12.75
A1-E	14+46.24	4.82' RT	12.86
A1-F	14+46.24	6.82' RT	12.88 TOP, (10.81) TOE
A1-G	14+64.57	5.18' LT	13.04 TOP, (10.57) TOE
A1-H	14+64.57	3.18' LT	13.07
A1-I	14+64.57	4.82' RT	13.18
A1-J	14+64.57	6.82' RT	13.20 TOP, (10.63) TOE
A1-K	14+94.57	3.18' LT	(11.40)
A1-L	14+94.57	4.82' RT	(11.38)

TABLE A1

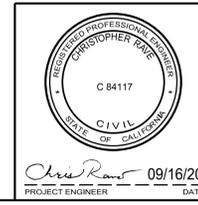
POINT	STATION	OFFSET FT	FG ELEV
A2-A	18+09.93	5.02' LT	(12.50)
A2-B	18+09.93	2.98' RT	(12.53)
A2-C	18+39.93	7.02' LT	13.96 TOP, (11.57) TOE
A2-D	18+39.93	5.02' LT	13.99
A2-E	18+39.93	2.98' RT	14.10
A2-F	18+39.93	4.98' RT	14.13 TOP, (11.73) TOE
A2-G	18+58.26	7.02' LT	13.60 TOP, (11.80) TOE
A2-H	18+58.26	5.02' LT	13.63
A2-I	18+58.26	2.98' RT	13.74
A2-J	18+58.26	4.98' RT	13.77 TOP, (11.55) TOE
A2-K	18+88.26	5.02' LT	(11.95)
A2-L	18+88.26	2.98' RT	(11.95)

TABLE A2

POINT	STATION	OFFSET FT	FG ELEV
A3-A	19+41.17	4.96' LT	(11.76)
A3-B	19+41.17	3.03' RT	(11.66)
A3-C	19+71.40	6.96' LT	13.30 TOP, (11.43) TOE
A3-D	19+71.36	4.96' LT	13.33
A3-E	19+71.20	3.03' RT	13.44
A3-F	19+71.16	5.03' RT	13.47 TOP, (11.39) TOE
A3-G	19+89.74	6.60' LT	13.57 TOP, (11.67) TOE
A3-H	19+89.70	4.60' LT	13.60
A3-I	19+89.54	3.40' RT	13.71
A3-J	19+89.50	5.40' RT	13.73 TOP, (11.18) TOE
A3-K	20+20.26	4.60' LT	(11.86)
A3-L	20+19.64	4.00' RT	(11.91)

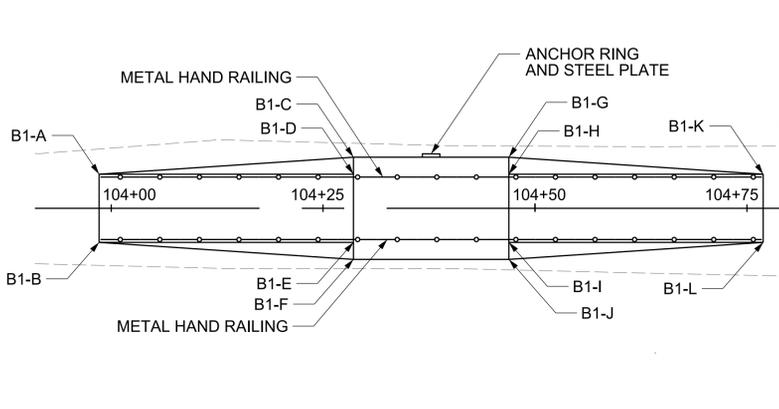
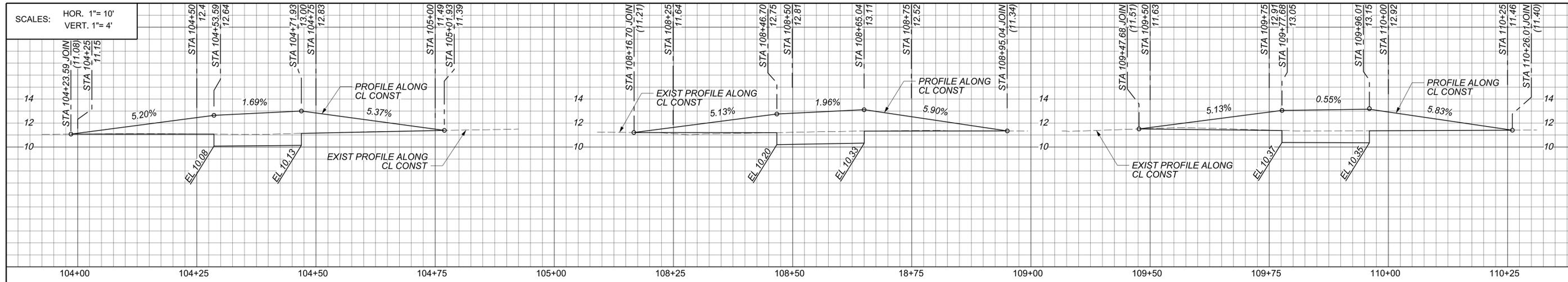
TABLE A3

CADD PROJECT FILE NAME: BALLONA CREEK TRASH.DGN  
 CHECKER: R. LUI  
 DESIGNER: R. LUI  
 DRAFTER: R. LUI / C. RAVE

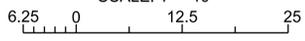


LOS ANGELES COUNTY PUBLIC WORKS  
**BALLONA CREEK**  
 TRASH INTERCEPTOR PILOT PROJECT  
 PLAN AND PROFILE  
 NORTH JETTY  
 PROJECT ID NO. FCC0001350

PROJECT ENGINEER: Chris Rave 09/16/20  
 LACFD INDEX NO. 17-D117.2  
 SHEET 2 OF 7

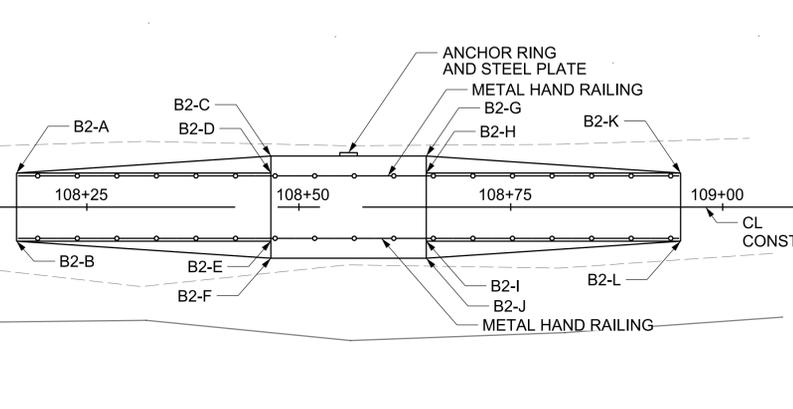


NORTH  
PLAN - B1

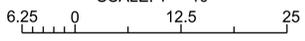


POINT	STATION	OFFSET FT	FG ELEV
B1-A	104+23.59	4.00' LT	(11.01)
B1-B	104+23.59	4.00' RT	(10.90)
B1-C	104+53.59	6.00' LT	12.56 TOP, (10.99) TOE
B1-D	104+53.59	4.00' LT	12.59
B1-E	104+53.59	4.00' RT	12.70
B1-F	104+53.59	6.00' RT	12.72 TOP, (11.09) TOE
B1-G	104+71.93	6.00' LT	12.92 TOP, (11.06) TOE
B1-H	104+71.93	4.00' LT	12.95
B1-I	104+71.93	4.00' RT	13.06
B1-J	104+71.93	6.00' RT	13.08 TOP, (11.17) TOE
B1-K	105+01.93	4.00' LT	(11.28)
B1-L	105+01.93	4.00' RT	(11.39)

TABLE B1

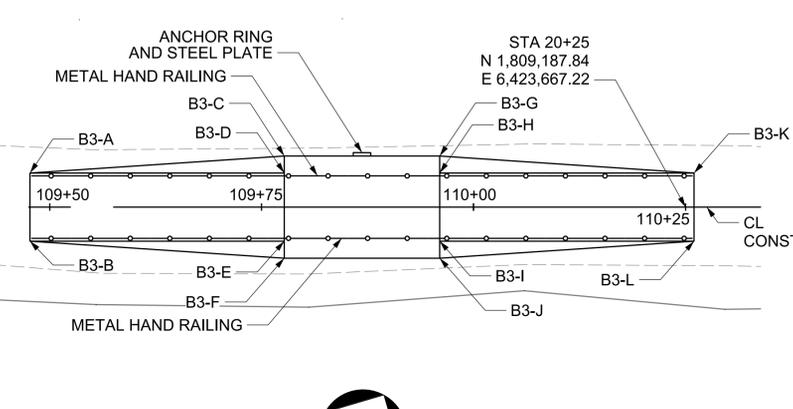


NORTH  
PLAN - B2

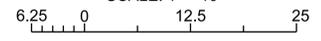


POINT	STATION	OFFSET FT	FG ELEV
B2-A	108+16.70	4.00' LT	(10.90)
B2-B	108+16.70	4.00' RT	(11.03)
B2-C	108+46.70	6.00' LT	12.67 TOP, (11.09) TOE
B2-D	108+46.70	4.00' LT	12.70
B2-E	108+46.70	4.00' RT	12.80
B2-F	108+46.70	6.00' RT	12.83 TOP, (11.34) TOE
B2-G	108+65.04	6.00' LT	13.03 TOP, (11.06) TOE
B2-H	108+65.04	4.00' LT	13.06
B2-I	108+65.04	4.00' RT	13.16
B2-J	108+65.04	4.98' RT	13.19 TOP, (11.38) TOE
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B2-L	108+95.04	4.00' RT	(11.40)

TABLE B2



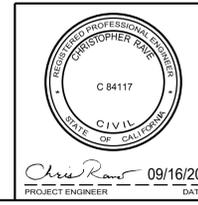
NORTH  
PLAN - B3



POINT	STATION	OFFSET FT	FG ELEV
B3-A	109+47.68	4.00' LT	(11.61)
B3-B	109+47.68	4.00' RT	(11.31)
B3-C	109+77.68	6.00' LT	12.97 TOP, (11.58) TOE
B3-D	109+77.68	4.00' LT	13.00
B3-E	109+77.68	4.00' RT	13.10
B3-F	109+77.68	6.00' RT	13.13 TOP, (11.26) TOE
B3-G	109+96.01	6.00' LT	13.07 TOP, (11.67) TOE
B3-H	109+96.01	4.00' LT	13.10
B3-I	109+96.01	4.00' RT	13.20
B3-J	109+96.01	6.00' RT	13.23 TOP, (11.65) TOE
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B3-L	110+26.01	4.00' RT	(11.42)

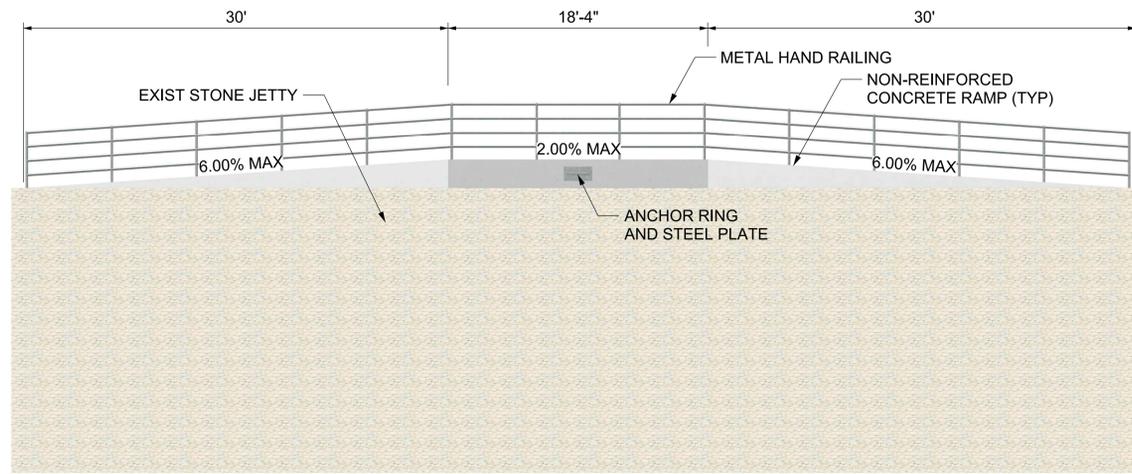
TABLE B3

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 CHECKER: R. LUI  
 DESIGNER: R. LUI  
 DRAFTER: R. LUI / C. RAVE

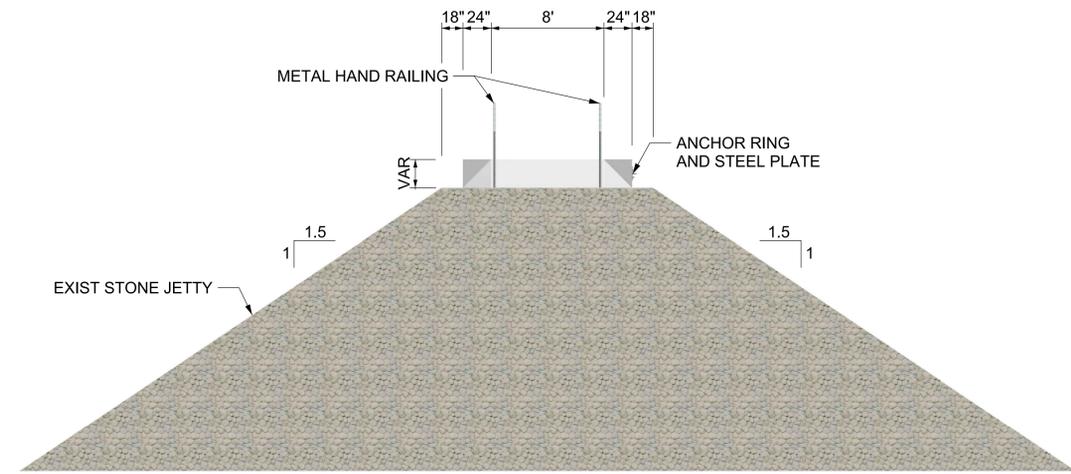


LOS ANGELES COUNTY PUBLIC WORKS  
**BALLONA CREEK**  
 TRASH INTERCEPTOR PILOT PROJECT  
 PLAN AND PROFILE  
 SOUTH JETTY  
 PROJECT ID NO. FCC0001350

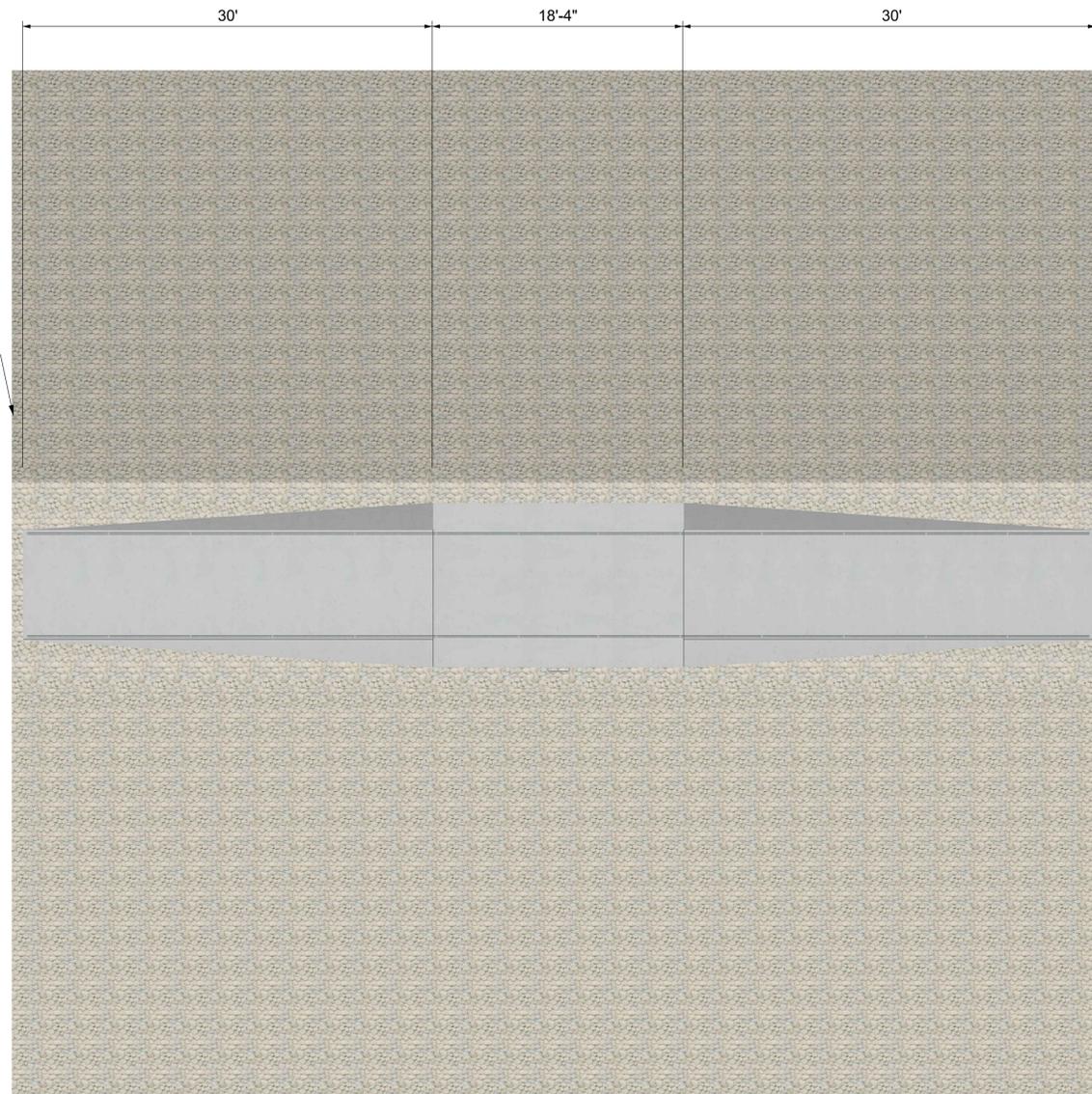
PROJECT ENGINEER: Chris Rave 09/16/20  
 LACFCD INDEX NO. 17-D117.3 SHEET 3 OF 7



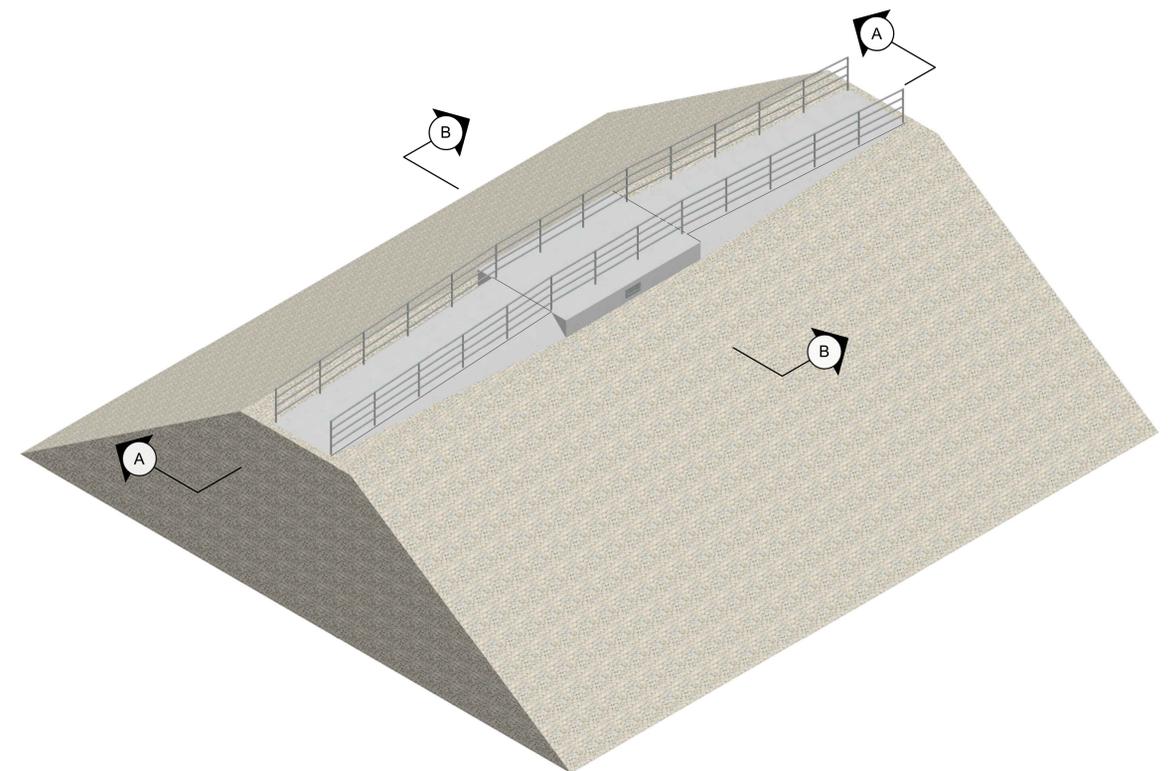
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**SECTION B-B**  
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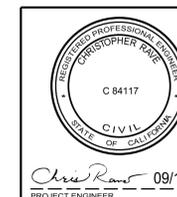


**JETTY ANCHOR (TOP)**  
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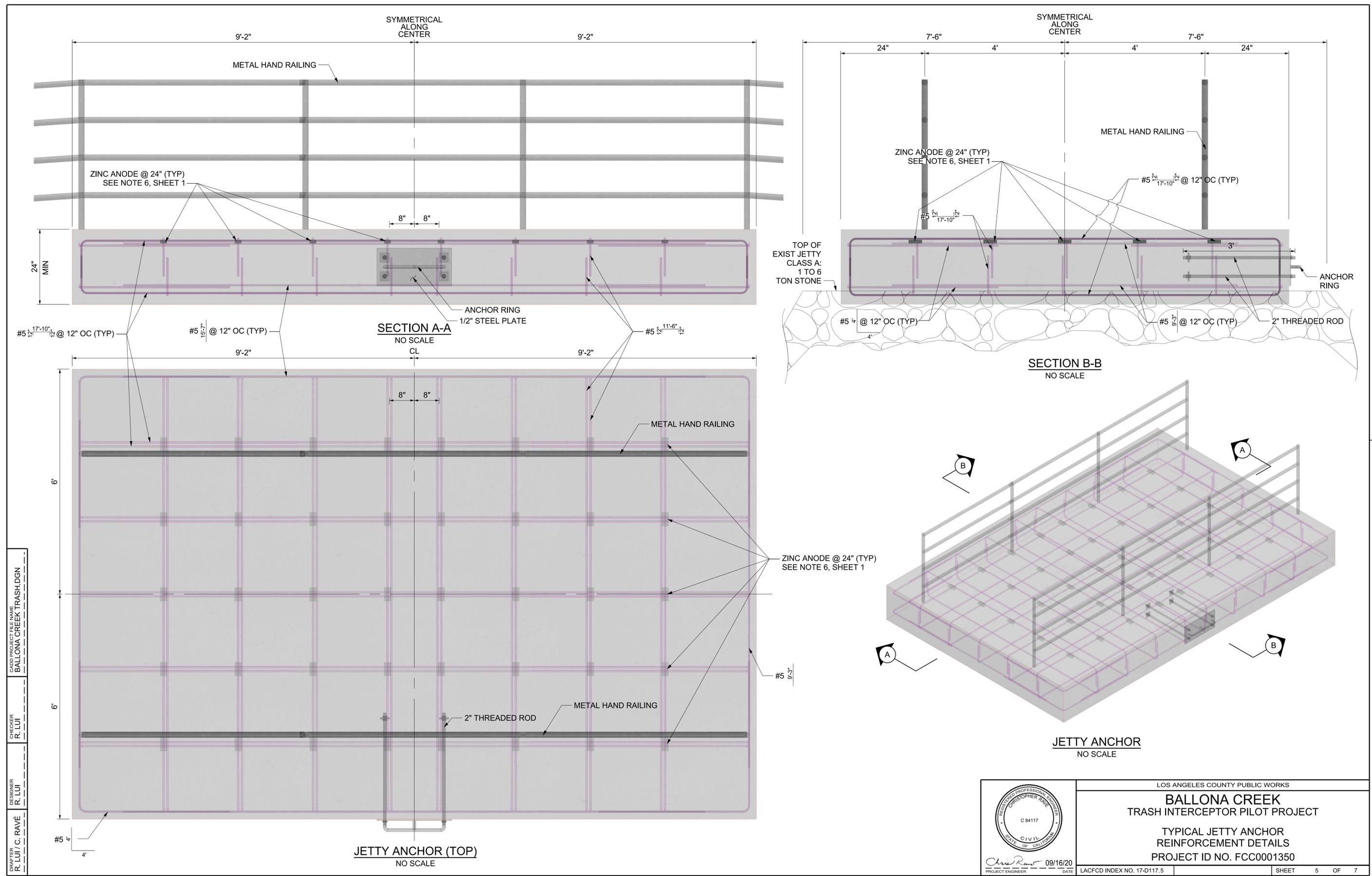


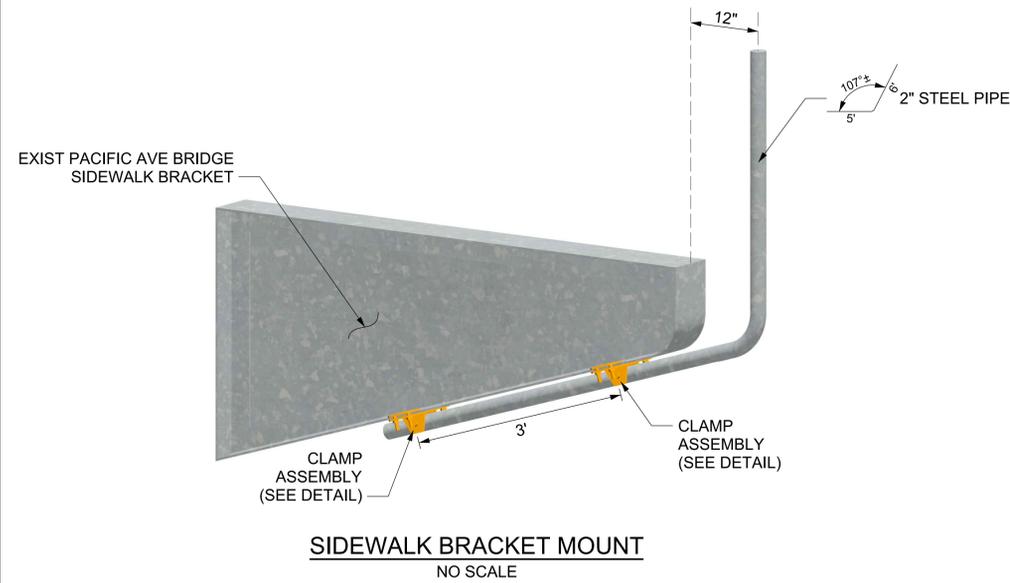
**JETTY ANCHOR**  
NO SCALE

DRAFTER: R. LUI / C. RAVE  
 DESIGNER: R. LUI  
 CHECKER: R. LUI  
 CADD PROJECT FILE NAME: BALLONA CREEK TRASH.DGN

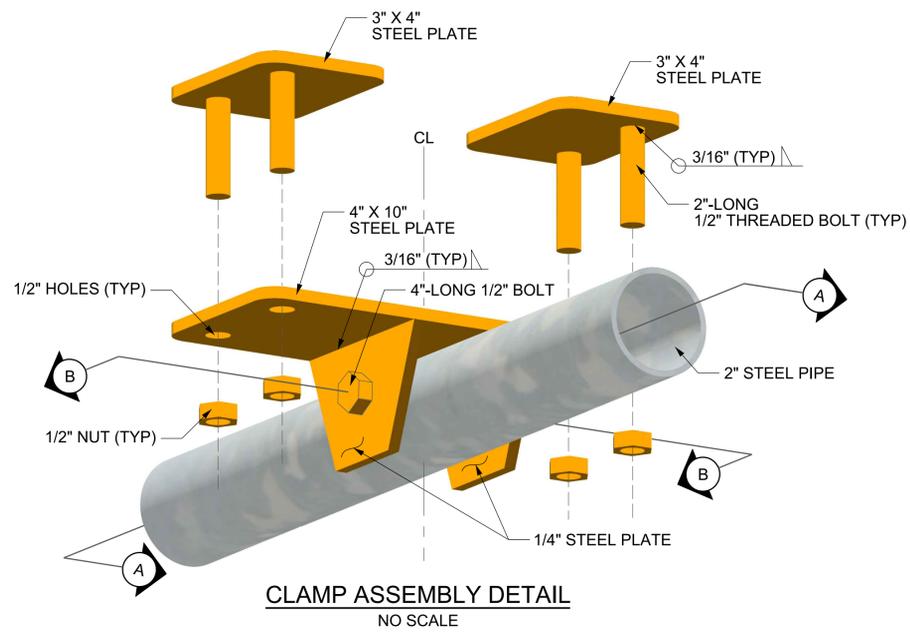


LOS ANGELES COUNTY PUBLIC WORKS	
<b>BALLONA CREEK</b>	
TRASH INTERCEPTOR PILOT PROJECT	
TYPICAL JETTY ANCHOR	
LAYOUT DETAILS	
PROJECT ID NO. FCC0001350	
PROJECT ENGINEER: Chris Rave	DATE: 09/16/20
LACFCD INDEX NO. 17-D117.4	SHEET 4 OF 7

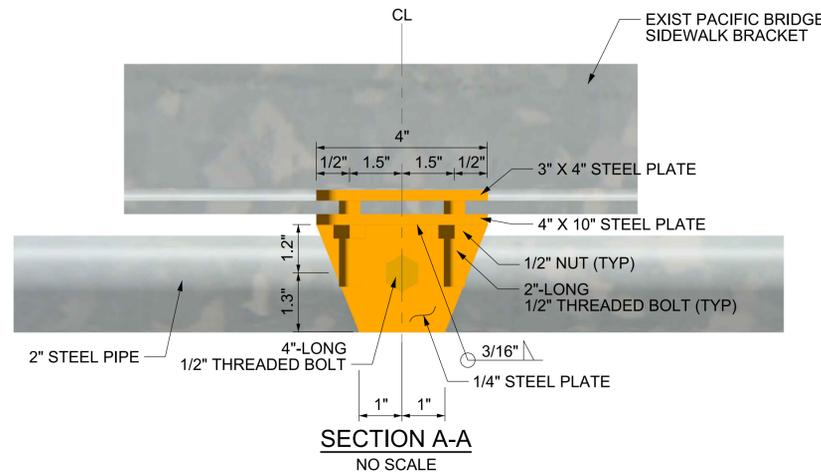




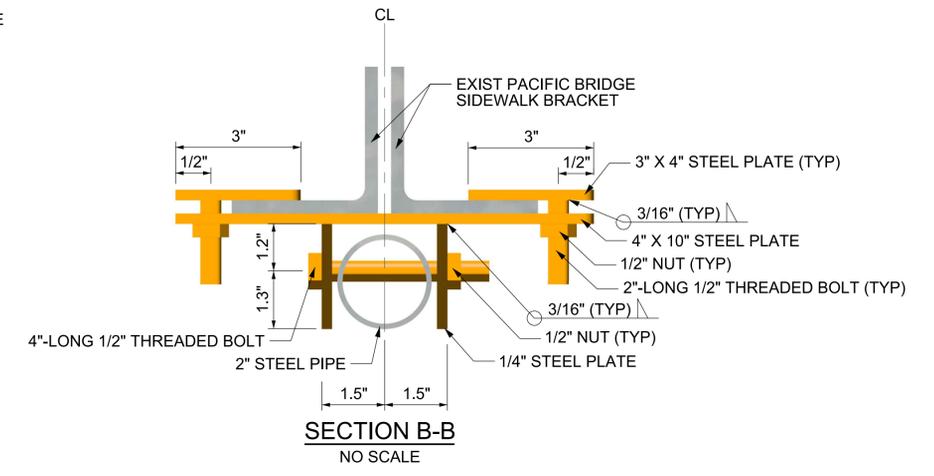
PACIFIC AVE BRIDGE MOUNT LOCATIONS  
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CLAMP ASSEMBLY DETAIL  
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SECTION A-A  
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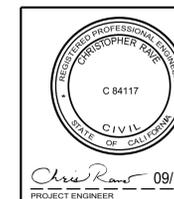


SECTION B-B  
NO SCALE

**NOTES:**

1. MOUNT TO BE INSTALLED AT SIDEWALK BRACKETS 5, 11, 19, AND 25. SEE PACIFIC AVE BRIDGE MOUNT LOCATIONS FOR REFERENCE.
2. STRUCTURAL STEEL PIPE SHALL BE STANDARD WEIGHT A500 STEEL (F<sub>y</sub> = 46 KSI).
3. ALL STEEL PLATES SHALL BE A36 STEEL (F<sub>y</sub> = 36 KSI) WITH A THICKNESS OF 1/4".
4. ALL EXPOSED STEEL PLATE CORNERS SHALL BE ROUNDED TO A RADIUS OF 1/16".
5. ALL WELDS TO BE 3/16" FILLET WELDS ALL AROUND.
6. CONTRACTOR SHALL FIELD CUT REMAINING PORTION OF 6" STEEL PIPE AFTER AFFIXING CAMERA AND SOLAR PANEL AT EACH MOUNT LOCATION. CAMERAS AND SOLAR PANELS TO BE PROVIDED BY OTHERS.

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 DESIGNER: R. LUI  
 DRAFTER: R. LUI / C. RAVE



LOS ANGELES COUNTY PUBLIC WORKS <b>BALLONA CREEK</b> TRASH INTERCEPTOR PILOT PROJECT  MOUNT DETAILS PROJECT ID NO. FCC0001350	
PROJECT ENGINEER DATE	SHEET 6 OF 7

**LA COUNTY BEST MANAGEMENT PRACTICE**

**NOTES:**

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORMWATER FROM THE PROJECT SITE AT ALL TIMES.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEEPED UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
9. "I CERTIFY THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ENSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED.

BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE INFORMATION SUBMITTED IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT SUBMITTING FALSE AND/OR INACCURATE INFORMATION, FAILING TO UPDATE THE ESCP TO REFLECT CURRENT CONDITIONS, OR FAILING TO PROPERLY AND/OR ADEQUATELY IMPLEMENT THE ESCP MAY RESULT IN REVOCATION OF GRADING AND/OR OTHER PERMITS OR OTHER SANCTIONS PROVIDED BY THE LAW."

PRINT NAME RAYMOND LUI  
(OWNER OR AUTHORIZED AGENT OF THE OWNER)

SIGNATURE *Raymond Lui* DATE 09/01/2020  
(OWNER OR AUTHORIZED AGENT OF THE OWNER)

**LA COUNTY BEST MANAGEMENT PRACTICE**

**NOTES (CONTINUED):**

THE FOLLOWING BMPS PER LACPW CONSTRUCTION SITE BMP MANUAL (2010) (HTTPS://DPW.LACOUNTY.GOV/CONS/SPECS/BMPMANUAL.PDF) MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY THE PROJECT ENGINEER OR THE BUILDING OFFICIAL).

- TEMPORARY SOIL STABILIZATION
- SS-1 - SCHEDULING
  - SS-2 - PRESERVATION OF EXISTING VEGETATION
  - SS-3 - HYDRAULIC MULCH
  - SS-4 - HYDROSEEDING
  - SS-5 - SOIL BINDERS
  - SS-6 - STRAW MULCH
  - SS-7 - GEOTEXTILES, PLASTIC COVERS, & EROSION CONTROL BLANKETS/MATS
  - SS-8 - WOOD MULCHING
  - SS-9 - EARTH DIKES/DRAINAGE SWALES & LINED DITCHES
  - SS-10 - OUTLET PROTECTION/VELOCITY DISSIPATION DEVICES
  - SS-11 - SLOPE DRAINS
  - SS-12 - STREAMBANK STABILIZATION

- TEMPORARY SEDIMENT CONTROL
- SC-1 - SILT FENCE
  - SC-2 - SEDIMENT/DESILTING BASIN
  - SC-3 - SEDIMENT TRAP
  - SC-4 - CHECK DAM
  - SC-5 - FIBER ROLLS
  - SC-6 - GRAVEL BAG BERM
  - SC-7 - STREET SWEEPING AND VACUUMING
  - SC-8 - SANDBAG BARRIER
  - SC-9 - STRAW BALE BARRIER
  - SC-10 - STORM DRAIN PROTECTION

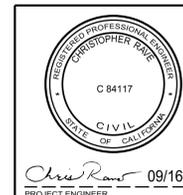
- TRACKING CONTROL
- TC-1 - STABILIZED CONSTRUCTION ENTRANCE/EXIT
  - TC-2 - STABILIZED CONSTRUCTION ROADWAY
  - TC-3 - ENTRANCE/OUTLET TIRE WASH

- NON-STORM WATER MANAGEMENT
- NS-1 - WATER CONSERVATION PRACTICES
  - NS-2 - DEWATERING OPERATIONS
  - NS-3 - PAVING AND GRINDING OPERATIONS
  - NS-4 - TEMPORARY STREAM CROSSING
  - NS-5 - CLEAR WATER DIVERSION
  - NS-6 - ILLICIT CONNECTION/ILLEGAL DISCHARGE DETECTION & REPORTING
  - NS-7 - POTABLE WATER/IRRIGATION
  - NS-8 - VEHICLE AND EQUIPMENT CLEANING
  - NS-9 - VEHICLE AND EQUIPMENT FUELING
  - NS-10 - VEHICLE AND EQUIPMENT MAINTENANCE
  - NS-11 - PILE DRIVING OPERATIONS
  - NS-12 - CONCRETE CURING
  - NS-13 - MATERIAL AND EQUIPMENT USE OVER WATER
  - NS-14 - CONCRETE FINISHING
  - NS-15 - STRUCTURE DEMOLITION OVER OR ADJACENT TO WATER
  - NS-16 - TEMPORARY BATCH PLANT

- WIND EROSION CONTROL
- WE-1 - WIND EROSION CONTROL

- WASTE MANAGEMENT AND MATERIAL POLLUTION CONTROL
- WM-1 - MATERIAL DELIVERY AND STORAGE
  - WM-2 - MATERIAL USE
  - WM-3 - STOCKPILE MANAGEMENT
  - WM-4 - SPILL PREVENTION AND CONTROL
  - WM-5 - SOLID WASTE MANGEMENT
  - WM-6 - HAZARDOUS WASTE MANAGEMENT
  - WM-7 - CONTAMINATION SOIL MANAGEMENT
  - WM-8 - CONCRETE WASTE MANAGEMENT
  - WM-9 - SANITARY/SEPTIC WASTE MANAGEMENT
  - WM-10 - LIQUID WASTE MANAGEMENT

CADD PROJECT FILE NAME  
 BALLONA CREEK TRASH.DGN  
 CHECKER  
 R. LUI  
 DESIGNER  
 R. LUI  
 DRAFTER  
 R. LUI / C. RAVE



LOS ANGELES COUNTY PUBLIC WORKS	
<b>BALLONA CREEK</b>	
TRASH INTERCEPTOR PILOT PROJECT	
BMP NOTES	
PROJECT ID NO. FCC0001350	
PROJECT ENGINEER <u>Chris Rave</u> DATE <u>09/16/20</u>	LACFCD INDEX NO. 17-D117.7
SHEET 7	OF 7

## Appendix C MARINE BIOLOGICAL TECHNICAL REPORT

**MARINE BIOLOGICAL ASSESSMENT  
FOR  
THE BALLONA CREEK INTERCEPTOR™ PROJECT  
MARINA DEL REY, CA**

***Prepared for:***

**The Ocean Cleanup**  
Batavierenstraat 15-7th Floor  
3014 JH Rotterdam  
The Netherlands

***Prepared by:***

**Merkel & Associates, Inc.**  
5434 Ruffin Road  
San Diego, CA 92123  
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*Fax:* (858) 560-7779

**October 2020**

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## **1.0 INTRODUCTION**

Public Works is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot project, the Ballona Creek Trash Interceptor™ Pilot Project “Project”, to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ within Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline (Figure 1). The purpose of the Project is to test the efficiency of The Ocean Cleanup’s Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project’s goal is to would capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protecting the environment.

This report documents the in-water marine biological condition at the Project location as well as provides an analysis of potential impacts to habitats and sensitive species. An Essential Fish Habitat (EFH) Assessment for the proposed Project is provided in a separate document.

## **2.0 PROJECT LOCATION AND DESCRIPTION**

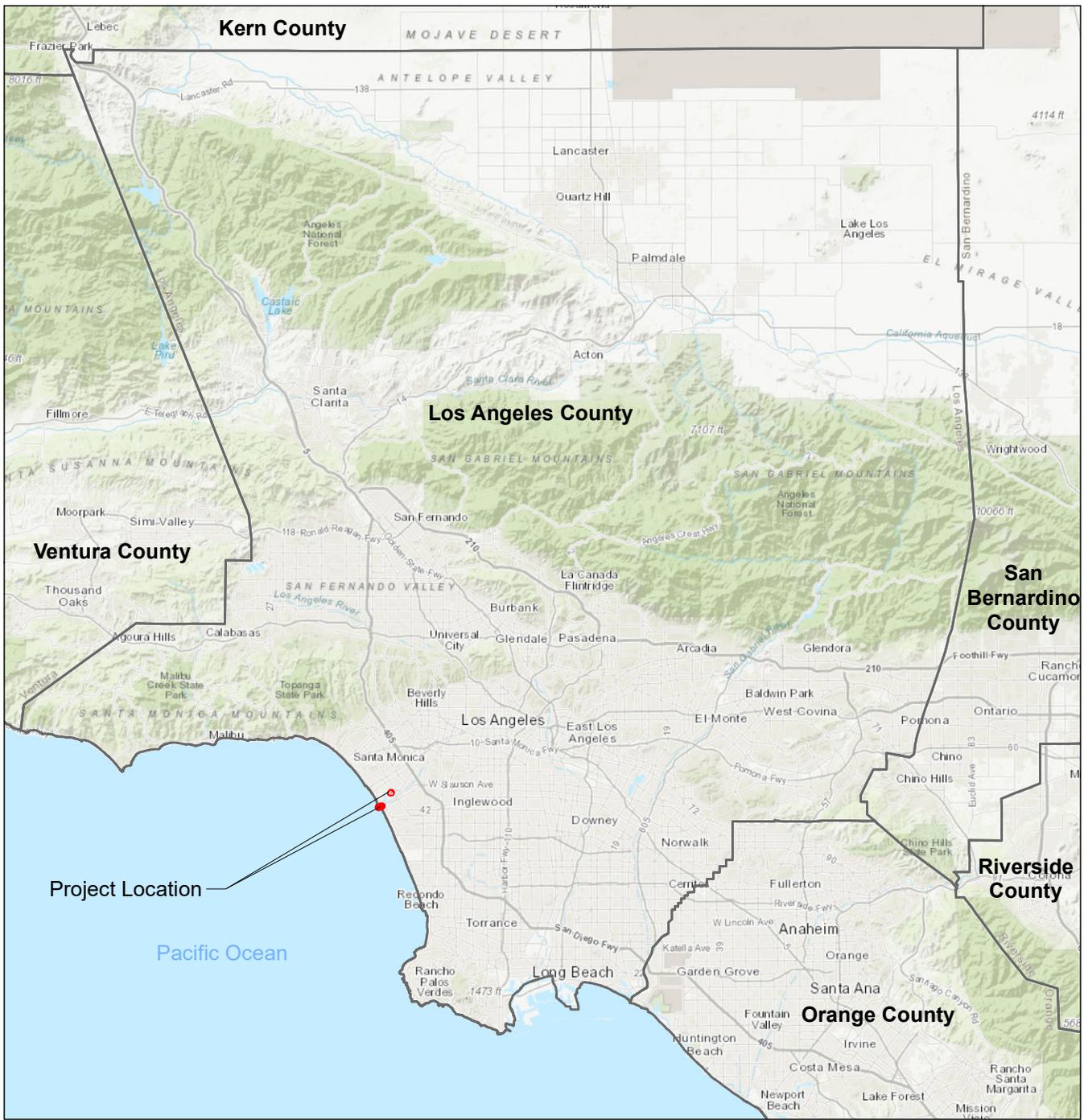
### **2.1 PROJECT LOCATION**

The Project is located within a channelized portion of Ballona Creek, approximately 1.5 miles west of CA-1, 0.5 mile east of the Santa Monica Bay, and immediately southwest of the Ballona Creek-Pacific Avenue Bridge, Marina del Rey South Jetty, and Marina del Rey Harbor Main Channel. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project (Figure 1).

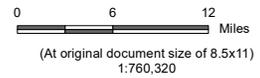
The study area is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats returning to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop with no public access.

### **2.2 PROJECT DESCRIPTION**

The floating Interceptor™ would be a single vessel (Figure 2) moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties (Figure 3). Each mooring would have a concrete pad which would be installed above-grade with the jetty as well as ramps with railings installed and attached to mooring ties to hold the Interceptor™ in place. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™.



 Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

*Figure No.*  
**1**

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020.
  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
- Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

I:\Users\1342-01\workgroup\184031268\05\_report\_delivdwgs\_design\gis\_figures\MXD\Permit\MXD\Figure1\_Permit\_LocationMap\_07092020.mxd Revised: 2020-09-28 By: dalaev

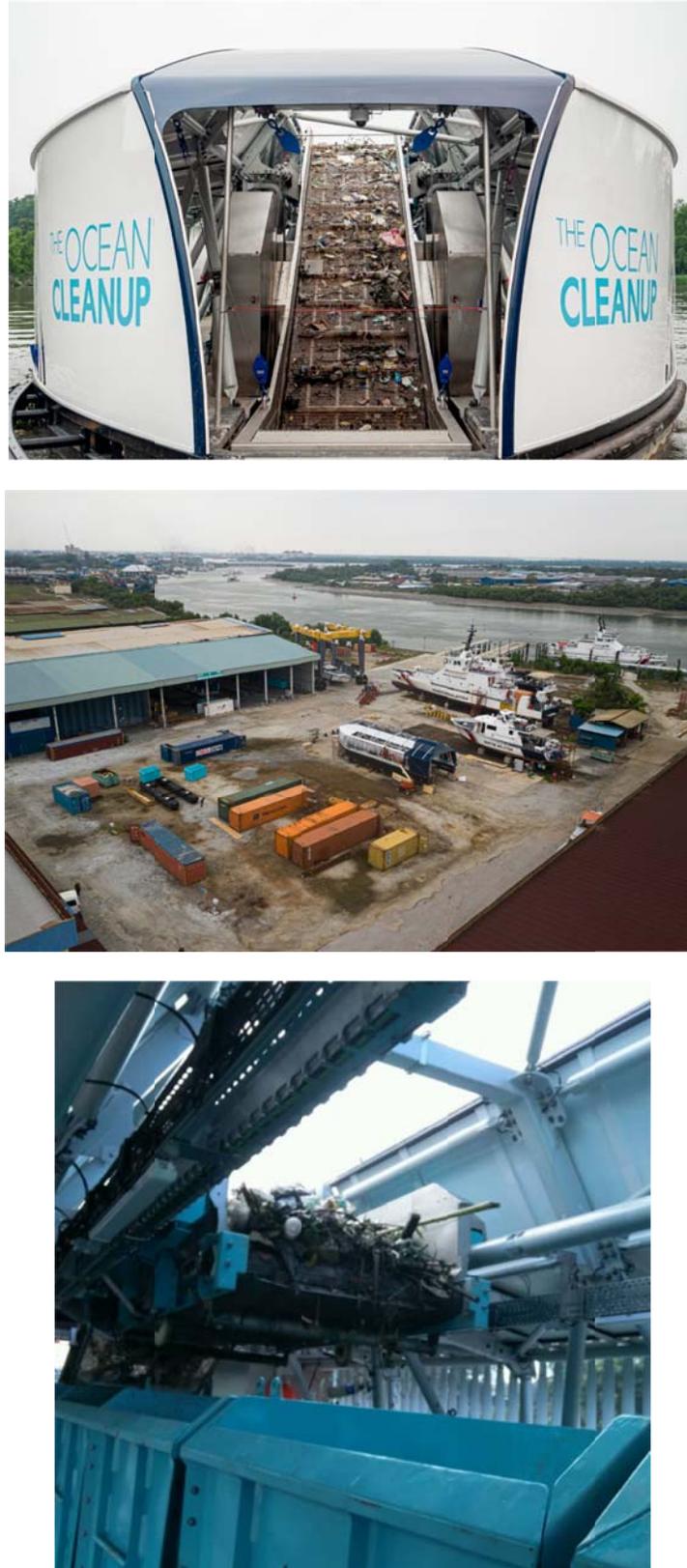


Figure 2. Pictures of Interceptor™ barge in Malaysia with barrier and dumpster barge.



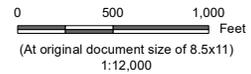
← Existing Bikeways

**Project Footprint**

-  Mooring Footprint [0.113 Acres]
-  Mooring Construction Staging Areas [0.37 Acres]
-  Interceptor Assembly Area [0.62 Acres]
-  Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
-  Trash Boom
-  Mooring Lines

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-28  
 TR by ST on 2020-09-28  
 IR by LM on 2020-09-28

Client/Project: 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

Figure No.

**3**

Title

**Project Vicinity**

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The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ would use both booms during the storm season (October-April), when stormwater flows wash greater amounts of trash and debris into Ballona Creek, and only one boom during the remainder of the year. The southern boom would remain in place while the northern boom would be able to be clipped and unclipped to the Interceptor™ prior to and after storm events. The booms, which would float atop the water would extend 18 inches beneath the water surface, and have a low draft allowing water to pass underneath without significant interference; therefore, not substantially obstructing or diverting the natural flow of water within Ballona Creek. In the event of an emergency, such as higher flow speeds within Ballona Creek, the booms are designed to automatically release and open by detaching from one side of the mooring on top of the jetty.

When the Interceptor™ is nearly full, it automatically sends a message to the local operators to collect the waste. Operators then remove the dumpsters (trash bins), bring them to the side of the Marina del Rey boat harbor, empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpsters back to the Interceptor™. The Interceptor™ pilot program is expected to be deployed and in operation for two storm seasons (up to 24 months).

Construction and installation of the Project would occur over an approximate six-month period. During construction of the moorings, the Ballona Creek North Jetty walkway would be temporarily closed to prevent public access due to safety considerations. Construction of the moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the Project; however, some excavation would be required to remove the existing stone jetty riprap to install the mooring blocks (12 feet wide x 8 feet long). In addition, minor ground disturbance would be required on top of the jetties to allow access for installation of Project components (i.e., Interceptor™ anchoring location, collection boom, and jetty mooring system). Approximately 0.113 acres would be disturbed or developed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings; however, most of the work would be conducted using hand tools. The Project would involve minimal vehicle trips including material import/ export as well as haul trucks required for construction.

### **3.0 PROJECT REGULATORY REQUIREMENTS**

The proposed project is subject to the following regulations.

#### **3.1 FEDERAL REGULATIONS**

##### **Clean Water Act**

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the CWA, is the major federal legislation governing water quality. The purpose of the federal CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Discharges into waters of the United States are regulated under the CWA. Waters of the United States currently include the territorial seas and traditional navigable waters, perennial and intermittent tributaries

to those waters, certain lakes, ponds, and impoundments, and wetlands adjacent to jurisdictional waters (33 C.F.R. § 328.3). Important applicable sections of the CWA are discussed below:

- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective RWQCB (Regional Water Quality Control Board). A Section 401 permit from the SWRCB (State Water Resources Control Board) or RWQCB would be required for issuance of a permit by the U.S. Army Corps of Engineers (USACE).

### **Rivers and Harbors Appropriation Act**

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403 et seq.), commonly known as the Rivers and Harbors Act (RHA), prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. Under RHA Section 10, the USACE is authorized to permit structures in or over navigable waters. Building or modifying wharves, piers, jetties, and other structures in or over the waters of the United States requires USACE approval through the Section 10 permit process.

In addition, Section 14 (33 U.S.C. § 408), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project.

### **Endangered Species Act**

The Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). The term “harm” is defined as an “act which actually kills or injures wildlife,” including through “significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” The term “harass” means an act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, lead federal agencies are required to consult with the USFWS or NMFS if the lead agency determines that its actions, including permit approvals or funding, may adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency may choose to informally consult with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency may formally consult to ensure full compliance with the ESA.

**Marine Mammal Protection Act**

The Marine Mammal Protection Act of 1972 (MMPA) prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas and the importation of marine mammals and marine mammal products into the United States. Under the MMPA, “take” is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal” (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal”. NMFS administers the MMPA. Under the 1994 Amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance which:

- **(Level A Harassment)** has the potential to injure a marine mammal or marine mammal stock in the wild; or,
- **(Level B Harassment)** has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

**Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) prohibits take of nearly every bird for which members of the bird’s taxonomic family are considered to be migratory. This results in the inclusion of most species of birds afforded protection. Under the MBTA, take means only to kill, directly harm, or destroy individuals, eggs, or nests, or to otherwise cause failure of an ongoing nesting effort.

**Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976 was established to promote domestic and commercial fishing under sound conservation and management principles. NMFS, as a branch of the National Oceanic and Atmospheric Administration (NOAA), implements the act via eight regional Fisheries Management Councils (FMCs). The FMCs in turn prepare and implement Fishery Management Plans (FMPs) in accordance with local conditions. The Pacific FMC is responsible for the Pacific region, in which the study area is located. The FMPs also establish EFH for the species they manage and require consultation by a lead agency with NMFS for actions that may adversely affect EFH. Following receipt of an EFH consultation request, NMFS will provide EFH Conservation Recommendations to the lead agency detailing measures that may be taken by the agency to conserve EFH. Within 30 days of receipt of EFH Conservation Recommendation, the project lead agency must respond in writing, including a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. These measures will be incorporated into the final project.

**3.2 STATE REGULATIONS****California Coastal Act**

The California Coastal Act (CCA) is intended to provide protection of the unique nature and public interest values of the state’s coastal fringe. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal development permit. The CCA is administered by the California Coastal Commission (CCC) or by local jurisdictions operating under adopted Local Coastal Programs that have been approved by the CCC.

**California Endangered Species Act**

The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050–2098). The CESA defines endangered species as those whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but that may become endangered in the foreseeable future. FGC Section 2080 prohibits the taking of state-listed plants and animals. Unlike the federal ESA, the CESA does not include harassment within its take definition and as such, has a statutorily higher threshold standard for take than does the federal ESA. The California Department of Fish and Wildlife (CDFW) also designates fully protected or protected species as those that may not be taken or possessed without a permit from the California Fish and Game Commission and/or CDFW. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

When a species is both state- and federally-listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination, if take authorization under the CESA is required.

**California Fish and Game Code**

The FGC is implemented by the California Fish and Game Commission, as authorized by Article IV, Section 20, of the Constitution of the State of California. FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. As defined in the Fish and Game Code, “take” means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86). The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. The CDFW oversees the management of marine species through several programs, some in coordination with NMFS and other agencies.

**3.3 LOCAL REGULATIONS****Marina del Rey Land Use Plan**

The Marina del Rey Land Use Plan (LUP) covers the study area, and includes the relevant portion of a local government's general plan, or local coastal element, and are sufficiently detailed to indicate the kinds, location and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of implementing actions (County of Los Angeles 2012). The Marina del Rey LUP covers the study area.

**Marina del Rey Local Coastal Plan**

Local Coastal Program (LCP) means a local government's (a) LUP, (b) zoning ordinances, (c) zoning district maps, and (d) within sensitive coastal resource areas, other implementing actions which, when taken together, meet the requirements of, and implement the provisions and policies of the CCA.

#### 4.0 ENVIRONMENTAL SETTING

The description of the environmental setting of the study area is based on physical and qualitative biological surveys conducted in the study area in April 2020, in addition to literature review. The study area is defined as the area that includes all elements of the project as well as the surrounding areas that could potentially be affected by the project. Above water mapping was completed using existing aerial photographs and Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California data. In-water work was completed using interferometric sidescan sonar (ISS), which provided an image of seafloor backscatter within the entire study area. Sidescan backscatter data were acquired at a frequency of 468 kHz, with a scanning range of 31 meters (102 feet) for both the starboard and port channels, resulting in a 62 meters (204-ft) wide swath. All data was collected in latitude and longitude using the North American Datum of 1983 (NAD 83). The survey was conducted by running transects spaced to allow for overlap between adjoining sidescan swaths. Transect surveys were performed until the entirety of the survey area was captured in the survey record. A Remotely Operated Vehicle (ROV) was used to groundtruth targets of interest (substrate, biota) and to photo document. Following completion of the survey, the data was converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the study area. Bathymetric data were processed using standard filtering and used to develop slope and relief maps. Surficial features and mappable habitat types were then digitized by a GIS specialist with expertise in interpreting sonar data for habitat mapping. The GIS specialist inspected the sonar mosaic and delineated habitats and features using ESRI ArcGIS software. Resources of interest were then digitized to show their distribution within the survey area. In addition, a qualitative survey of the rip rap revetment was conducted to note dominant biota. No grab sampling or otter trawls were conducted.

##### 4.1 HABITATS WITHIN THE STUDY AREA

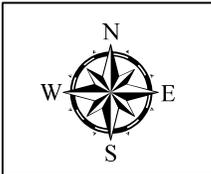
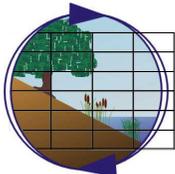
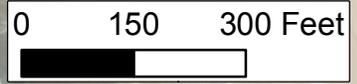
Habitats were delineated into two categories: upland and in-water (or marine), with sub-categories classified if present. They were further differentiated by elevation and/or depth, with upland habitat encompassing the area above +7.8 ft MLLW, intertidal habitat encompassing the area between +7.8 and -2.2 ft MLLW, and subtidal habitat below -2.2 ft MLLW. A summary of the various habitat types within the study area is provided in Table 1, depicted in Figure 4, and described in the following sections.

**Table 1. Habitat summary in study area.**

Category	Elevation	Habitat Type	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Upland	>+7.8 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	3,937	42,377
Marine	Intertidal +7.8 to -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	5,112	55,021
		Unvegetated Soft Bottom	1,629	17,532
		Sub-Total	6,740	72,553
	Subtidal Below -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	1,495	4,934
		Unvegetated Soft Bottom	32,909	354,228
		Debris/Cobble	95	1,028
		Sub-Total	34,499	371,350
Grand Total			45,170	486,208

### Legend

- Study Area
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 4**

**Upland Area**

The upland area of the study area consists of rip rap revetment with and without concrete fill, and covers approximately 3,937 m<sup>2</sup> (42,377 ft<sup>2</sup>) (Table 1). The area is highly developed, and no special status flora or wildlife species occur in the upland areas (Figure 5).



**Figure 5. Upland area consists of rip rap revetment with and without concrete fill. Left image is north jetty looking downstream; Right image is south jetty looking downstream.**

**Intertidal/Shallow Subtidal Riprap Revetment**

The shoreline along the perimeter of the study area is armored with riprap revetment in the upper intertidal and shallow subtidal zones and covers approximately 6,607 m<sup>2</sup> (71,115 ft<sup>2</sup>) (Table 1 and Figure 5), where it transitions to unvegetated intertidal and shallow subtidal habitat.

Tide level influences the development of the riprap community, and bare rock is more common in the upper intertidal zone. Macroalgae were uncommon in the upper intertidal zone with coverage limited to small amounts of red algal turfs or occasional leafy green algae (*Ulva* sp.). Barnacles (*Balanus*, *Chthamalus*, *Tetraclita*) were abundant in the upper intertidal zone, as well as various limpets (*Lottia* spp.) and snails (*Littorina* sp., *Acanthina spirata*) (Figure 6).

In the mid to low intertidal zone, bare rock was less visible and there was a higher percentage of coralline and other small attached algae (*Chondracanthus* spp., *Ulva* sp., *Corallina* spp., *Mazzaella* spp., *Leathesia* sp., *Petrocelis*, *Gymnogongrus* spp.), in addition to other turf species (Figure 6). Observed invertebrates included sponges, tunicates, tube snails (*Serpulorbis squamigerus*), limpets (*Lottia* spp.), mussels (*Mytilus galloprovincialis*), oysters (*Crassostrea gigas*), and anemones (*Anthopleura* sp.). Similar species were also observed in the shallow subtidal zone, including red algal turfs, encrusting algae, articulated corallines, and sessile invertebrates (Figure 7).



**Figure 6. Shoreline of study area depicting revetment from upper intertidal to shallow subtidal zone.**

### **Subtidal Unvegetated Habitat**

The majority of the study area is considered to be shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt, with areas of accumulated shell hash and debris, and covers approximately 32,909 m<sup>2</sup> (354,228 ft<sup>2</sup>) (Table 1 and Figure 8). Sampling conducted in the Ballona Creek estuary for the Bight '08 Regional Survey noted that the sediment consisted of approximately 56% sand and 44% fines (Table 2; SCCWRP 2011a). In addition, historical sediment quality data indicated that sediments within the tidal reach of Ballona Creek are impacted by metals, pesticides, polycyclic aromatic hydrocarbons (PAHs), and other organic compounds (USACE 2017), and that Total Maximum Daily Loads (TMDLs) for trash, bacteria, and metals in the water column, and for toxics including PAHs, pesticides, and other organic compounds in sediment and fish tissue have been developed to address exceedances of these constituents in Ballona Creek.



Figure 7. Study area transitions from shallow subtidal revetment to unvegetated subtidal habitat.

Table 2. Sediment grain size in Ballona Creek from Bight '08 survey.

Classification	Mean Percent
Total Silt and Clay (less than 0.0625mm)	43.9
Very Fine Sand (0.0625 to 0.125mm)	27.8
Fine Sand (0.125 to 0.25mm)	20.1
Medium Sand (0.25 to 0.5mm)	7.5
Coarse Sand (0.5 to 1mm)	0.7
Very Coarse Sand (1 to 2mm)	0.0
Gravel (greater than 2mm)	0.0



**Figure 8. Unvegetated soft bottom habitat ranged from barren sandy areas to areas with shell hash and debris.**

Organisms that live in soft bottom habitat are referred to as infauna, while those organisms that live on soft bottom habitat are referred to as epifauna. The density (number of individuals per unit area) and species composition of these organisms are influenced by sediment grain size, amount of nutrients, water depth, pollutant levels in the sediments and overlying water, and time since the last disturbance by vessel activity and/or construction, and therefore can serve as an indicator of habitat quality. Several benthic fauna surveys have been conducted within Ballona Creek. Common infaunal organisms recorded in Ballona Creek during the Bight '08 Regional Survey included polychaete worms (*Capitella* sp., *Pseudopolydora* sp., *Polydora* spp., *Neanthes* sp.), amphipods (*Grandidierella* spp., *Mayerella acanthopoda*), and molluscs (*Saxidomus nuttalli*, *Mytilus* sp., Pectinidae, *Musculista senhousia*) (SCCWRP 2012). Benthic epifauna observed during the Bight '08 Regional Survey and other otter trawl sampling noted a variety of organisms including crabs, molluscs, and sea stars (Table 3; M&A 2009, SCCWRP 2011b).

**Table 3. Benthic epifauna observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09
Bivalve	<i>Chione</i> sp.		X
Blackspotted bay shrimp	<i>Crangon nigromaculata</i>	X	
Calico scallop	<i>Argopecten ventricosus</i>		X
California aglaja	<i>Navanax inermis</i>		X
California bubble	<i>Bulla gouldiana</i>		X
Crab	<i>Cancer</i> sp.		X
Hydroid	Hydrozoa	X	
Mediterranean mussel	<i>Mytilus galloprovincialis</i>		X
Northern kelp crab	<i>Pugettia producta</i>		X
Nudibranch	<i>Dendronotus frondosus</i>	X	
Shore crab	<i>Hemigrapsus oregonensis</i>		X
Slender crab	<i>Metacarcinus gracilis</i>	X	
Spider crab	<i>Pyromaia tuberculata</i>	X	X
Spiny sand star	<i>Astropecten armatus</i>	X	
Winged sea slug	<i>Gastropteron pacificum</i>		X

Several fish surveys have been conducted in the Ballona Creek estuary and include the Bight '08 Regional Survey, otter trawl sampling conducted by Merkel & Associates in 2009, and habitat mapping for this project which utilized ROV. The results are summarized in Table 4, and the more common fishes included Round Stingray (*Urobatis halleri*), Spotted Sand Bass (*Paralabrax maculatofasciatus*), Black Croaker (*Cheilotrema saturnum*), Specklefin Midshipman (*Porichthys myriaster*), gobies (Gobiidae), flatfishes (*Paralichthys californicus*, *Pleuronichthys guttulatus*, *Parophrys vetulus*, *Xystreurys liolepis*, *Citharichthys sordidus*, *Pleuronichthys ritteri*) (M&A 2009, SCCWRP 2011b). Although two individual southern California steelhead (*Oncorhynchus mykiss irideus*) were observed in Ballona Creek in 2008 (upstream of the Ballona Reserve), the creek and its tributaries are heavily urbanized and do not provide suitable foraging or spawning habitat (USACE 2017).

### **Subtidal Vegetated Habitat**

Vegetated subtidal habitats are an essential component of southern California's coastal marine environment. Eelgrass (*Zostera marina*) beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. The survey of in-water habitats completed in April 2020 detected no eelgrass in the shallow waters of the study area.

**Table 4. Fish species observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09	M&A '20
Bay Pipefish	<i>Syngnathus leptorhynchus</i>		X	
Black Croaker	<i>Cheilotrema saturnum</i>		X	
California Halibut	<i>Paralichthys californicus</i>	X	X	
California Lizardfish	<i>Synodus lucioceps</i>	X		
CIQ goby	<i>Clevelandia/Ilypnus/Quietula complex</i>		X	
Diamond Turbot	<i>Pleuronichthys guttulatus</i>		X	
English Sole	<i>Parophrys vetulus</i>	X		
Fantail Sole	<i>Xystreureys liolepis</i>	X	X	
Hornyhead Turbot	<i>Pleuronichthys verticalis</i>	X	X	
Kelp Bass	<i>Paralabrax clathratus</i>			X
Pacific Sanddab	<i>Citharichthys sordidus</i>	X		
Queenfish	<i>Seriphus politus</i>		X	
Roughback Sculpin	<i>Chitonotus pugetensis</i>	X		
Round Stingray	<i>Urobatis halleri</i>		X	
Salema	<i>Xenistius californiensis</i>		X	
Sargo	<i>Anisotremus davidsonii</i>		X	
Shiner Surfperch	<i>Cymatogaster aggregata</i>		X	
Shovelnose Guitarfish	<i>Rhinobatos productus</i>		X	
Speckled Sanddab	<i>Citharichthys stigmaeus</i>	X		
Specklefin Midshipman	<i>Porichthys myriaster</i>	X		
Spotted Bay Bass	<i>Paralabrax maculatofasciatus</i>			X
Spotted Turbot	<i>Pleuronichthys ritteri</i>	X		
Staghorn Sculpin	<i>Leptocottus armatus</i>		X	
Striped Kelpfish	<i>Gibbonsia metzi</i>		X	
Topsmelt	<i>Atherinops affinis</i>		X	X
Yellowfin Croaker	<i>Umbrina roncadore</i>		X	
Zebra Perch	<i>Kyphosus azureus</i>			X

Note: Bight '08 sampling conducted with 25' otter trawl; M&A '09 sampling conducted with 10' otter trawl; M&A '20 sampling conducted with ROV

### **Open Water**

Open water/water column habitat due to its three dimensional component, is the largest habitat type within the study area, and supports pelagic fishes and occasionally marine mammals. A common schooling species observed within the study area is Topsmelt (*Atherinops affinis*), and while not observed, other schooling species such as Northern Anchovy (*Engraulis mordax*) and Sardines (*Sardinops sagax*) may also occur in the area. The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers. These fish also provide an important forage base for predatory fish species.

#### 4.2 WETLANDS AND SENSITIVE HABITATS

Wetlands, as defined by the USACE, are not present within the study area. The nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area.

Eelgrass is a rooted aquatic plant that inhabits shallow soft bottom habitats in quiet waters of bays and estuaries, as well as sheltered coastal areas. It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Eelgrass is considered a Submerged Aquatic Vegetation (SAV), and a “special aquatic site” under the CWA. Pursuant to the MSA, eelgrass is designated as a Habitat Area of Particular Concern (HAPC) within EFH for various federally-managed fish species within the Pacific Coast Groundfish FMP (NMFS 2014a). As noted in the Subtidal Vegetated Habitat section, eelgrass was not detected within the study area in April 2020.

#### 4.3 WILDLIFE CORRIDORS

Ballona Creek provides movement for marine fish species into and out of the study area, and occasionally marine mammals such as California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina richardsi*) have been observed in the Ballona Creek channel (USACE 2017). Several whale species migrate along the coast of California, including the California gray whale (*Eschrichtius robustus*). The peak northward migration of male gray whales occurs in mid-March, followed two months later by the second migration wave, which is composed of cows and calves. Whales typically do not occur in harbors like Marina del Rey or estuaries like Ballona Creek (USACE 2017). While mobile animals make use of the creek mouth, it is not considered a wildlife corridor (USACE 2017).

#### 4.4 SENSITIVE WILDLIFE

Table 5 lists sensitive animal species with the potential and likelihood to occur within the study area. Only two species listed by USFWS and/or CDFW as federally or state endangered or threatened have the potential to occur within the study area: the federally endangered steelhead and federally threatened green sea turtle (*Chelonia mydas*). While two steelhead were observed upstream of the study area in Ballona Creek in 2008, the upstream habitat was considered low quality, providing limited foraging, spawning or rearing habitat (USACE 2017). Further, subsequent surveys have not detected steelhead within Ballona Creek (USACE 2017).

Green sea turtles are known to occur in the warm water discharge of a Long Beach power plant, but are rarely sighted in Santa Monica Bay. Due to lack of required water temperatures, food sources, and nesting habitat within Ballona Creek they are unlikely to regularly occur in the study area.

Finally, several species of marine mammals which are protected by the MMPA may occur in the study area (Table 5). California sea lion (*Zalophus californianus californianus*) and, to a lesser extent, Pacific harbor seal (*Phoca vitulina richardsi*) are the two most common species of marine mammals that occur within harbors and bays. California sea lion and Pacific harbor seal may occasionally be observed in the vicinity of the study area, but are not expected to utilize the area. Dolphins and whales are not anticipated to be present within the study area (USACE 2017).

**Table 5. Sensitive species with potential to occur within the study area.**

Common Name	Scientific Name	Status	Occurrence in Study Area
<b><u>Fish</u></b>			
Southern California Steelhead	<i>Oncorhynchus mykiss irideus</i>	FE; SSC; S1	Very Low Potential - Migrate into fresh water streams when sandbars breach during winter and spring rains. Occur in coastal streams with water temperatures < 15°C. Need cool, clear water with in-stream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean. Spawning habitat consists of gravel substrates free of excessive silt. In 2008, observed in Ballona Creek approximately 2.5 miles upstream of the Marina Freeway overpass; however, focused aquatic surveys from 2009-2011 have not detected this species on the study area. No spawning habitat available in Ballona Creek (USACE 2017).
<b><u>Reptiles</u></b>			
Green Sea Turtle	<i>Chelonia mydas</i>	FT; S1	Very Low Potential - Inhabits coastal areas for benthic feeding and beaches for nesting. In the eastern North Pacific, green sea turtles have been sighted from Baja California to southern Alaska. While turtles commonly occur from San Diego southward, they have an established population at the San Gabriel River estuary and Los Cerritos Wetlands, 30 miles to the south. Rare sightings are reported in Ballona Creek (USACE 2017).
<b><u>Marine Mammals</u></b>			
Pacific Harbor Seal	<i>Phoca vitulina richardsi</i>	MMPA	Low Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
California Sea Lion	<i>Zalophus californianus californianus</i>	MMPA	Moderate Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
Coastal Bottlenose Dolphin	<i>Tursiops truncatus</i>	MMPA	Low Potential – Highly mobile within the inshore waters of Santa Monica Bay (Fandel et al. 2015).
California Gray Whale	<i>Eschrichtius robustus</i>	MMPA	Very Low Potential – Regular migrant in offshore waters, but uncommon in bay and nearshore waters.

**Notes:** FE – Federally Endangered; FT – Federally Threatened; MMPA – species protected by the Marine Mammal Protection Act; SSC – CDFW Species of Special Concern; S1 – Critically Imperiled - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

## 5.0 IMPACT ANALYSIS

The study area is similar to other developed shallow embayments and estuaries located in coastal areas in the Southern California Bight with regard to distribution of habitats and biological features. This analysis focuses on stressors associated with the proposed project elements (i.e., upland construction, vessel operations, and shading) and their potential impact to biological resources including in-water habitat (i.e., intertidal/shallow subtidal riprap revetment, unvegetated subtidal habitat, open water), upland habitat, wildlife corridors, and sensitive species within the study area. As noted in the project description, no in-water construction (e.g., dredging, filling, pile driving) is proposed, and the potential stressors from the proposed project include:

- Mooring construction (in upland area)
- Barge placement
- Barge maintenance operations

Since it is anticipated that elements of the project will be phased, the impacts are analyzed by habitat type and based on the potential stressor.

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region (Santa Monica Bay), the sensitivity of the resource to activities associated with the proposed project, and the duration or ecological ramifications associated with the effect. Per California Environmental Quality Act (CEQA) Guidelines, Section 15000 et seq., impacts are considered significant if they would result in:

- Degradation of critical habitat or reduction in the population size of a listed species (threatened or endangered);
- Degradation of rare or biologically valuable habitat;
- A measurable change in ecological function within the project vicinity;
- A measurable change in species composition or abundance beyond that of normal variability;
- A substantive loss of water surface area through fill or surface water coverage as a result of permanent structures such as docks, wharves, and permanently moored vessels. Small structures such as moorings, navigational aids, individual or widely spaced piles do not result in a substantive loss of water area; or
- An obstruction or alteration of circulation patterns that result in a discernable degradation of water mixing, circulation, or flushing to the extent that biota would be negatively affected in the system.

Impacts to habitats and wildlife can be measured as direct and/or indirect, as well as permanent or temporary. Direct impacts are those that have a direct impact on habitats or wildlife and occur contemporaneously with the action. Direct impacts of in-water construction to wildlife include immediate physical and physiological impacts such as abrupt changes in behavior, flight response, diving, evading, flushing, cessation of feeding, and physical impairment or mortality. Direct impacts to habitats can include damage from construction activities, as well as permanent habitat loss due

to project construction. In contrast, indirect impacts are effects that are caused by or will result from the proposed action at a later time, but are still reasonably certain to occur.

### 5.1 UPLAND AREA IMPACTS

The proposed project consists of construction of six concrete mooring/anchoring pads with each pad covering approximately 76 m<sup>2</sup> (820 ft<sup>2</sup>) for a total construction footprint of approximately 457 m<sup>2</sup> (4,920 ft<sup>2</sup>) on top of the existing rip rap revetment (Table 6 and Figure 9). The construction footprint consists of rip rap revetment with and without concrete fill and supports no special status wildlife or flora species or sensitive habitat. Therefore, temporary impacts on upland habitat are expected, but no significant impacts to biological resources on upland habitat are anticipated from the implementation of the proposed project.

**Table 6. Impact summary for marine habitats.**

Project Element	Category	Habitat Type	Nature of Impact	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Mooring Footprint	Upland Habitat	Man-Made Structure (Rip-Rap Revetment)	Construction/ Fill	457	4,920
Interceptor™ Tie Down	Marine Habitat	Unvegetated Soft Bottom	Shading	385	36
Interceptor™ Footprint	Marine Habitat	Unvegetated Soft Bottom	Surface Cover/ Shading	56	603

### 5.2 IN-WATER HABITAT IMPACTS

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

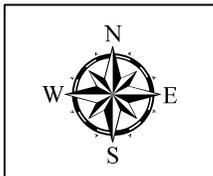
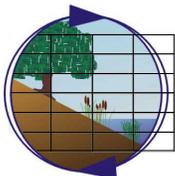
The mooring platforms placed on top of the rip rap revetment will be used to stabilize the Interceptor™ with chain (Figure 3). The chain is anticipated to run just below the waterline but would not rest on the seafloor, and the two upstream platforms would anchor the floating trash booms that would funnel waste to the Interceptor™ barge. The project will not directly impact the intertidal/shallow subtidal revetment, and therefore, no impacts on intertidal/shallow subtidal revetment habitat are expected, and no significant impacts to biological resources associated with intertidal/shallow subtidal revetment are anticipated from the implementation of the proposed project.

#### **Intertidal and Subtidal Unvegetated Habitat**

Barge placement and tie downs would have a direct impact to approximately 92 m<sup>2</sup> (989 ft<sup>2</sup>) of intertidal and subtidal unvegetated habitat including the associated benthic community due to shading (Table 6 and Figure 9). Since the barge is floating, there would be no direct loss or mortality of any benthic infauna and epifauna within the barge footprint, and since eelgrass is not present, no shading impacts to eelgrass would occur. The impact area is relatively small and there is considerable similar soft bottom habitat immediately adjacent to the project footprint, and therefore, impacts associated with barge placement are considered less than significant.

**Legend**

- Study Area
- Interceptor Tie Downs
- Interceptor Footprint
- Mooring Footprint
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions and Project Elements**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 9**

In addition, the barge would result in a 56 m<sup>2</sup> (603 ft<sup>2</sup>) increase of surface area coverage; an increase in surface cover would decrease open water habitat (Table 6). This would decrease the foraging habitat available for piscivorous avian species, although given the relatively small areas affected, this increase in surface coverage would not be considered significant.

### **Subtidal Vegetated Habitat**

No eelgrass vegetated habitat was detected in the study area and therefore, no impacts are expected.

### **Open water**

Since no in-water construction activities are proposed, effects from construction such as temporary and localized increases in turbidity and sedimentation within the water column, or noise (enonification) which can result in temporary and or permanent impacts to organisms in the water are not expected. With respect to noise, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected. During construction, the Project would only require the use of hand tools and minimal heavy machinery along the adjacent jetty, not within the Ballona Creek channel. Accordingly, given existing noise and vessel traffic disturbance, a short term installation period, minimal noise associated with the solar-powered operation of the water flow-through system the Project is not expected to create long-term noise disturbance or cause associated harm to organisms in the water column. And given the location of the project, it is anticipated that water velocities will be tidally and storm driven, and that the placement of the barge and barriers would not meaningfully alter water velocities, sedimentation rates, or circulation patterns in the study area. As noted above, the proposed project would temporarily result in an increase of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>) of surface area coverage (Table 6). This increase in surface coverage (or loss of open water habitat) is not expected to affect foraging by piscivorous avian species and is not considered significant.

## **5.3 IMPACTS TO WETLANDS AND SENSITIVE HABITATS**

As described above, the nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area. The proposed project would not alter water flow or water quality to marsh habitat, and is not anticipated to degrade marshlands in any way. Therefore no significant impacts to wetlands are anticipated to occur.

Eelgrass beds are considered to be a sensitive habitat and “special aquatic site” under the CWA and are designated as EFH, and as noted in the Subtidal Vegetated Habitat section, no eelgrass was present within the study area and therefore, no impacts to eelgrass habitat are anticipated to occur.

## **5.4 IMPACTS TO ESSENTIAL FISH HABITAT**

As part of the EFH consultation process, the guidelines require Federal action agencies to prepare a written EFH Assessment describing the effects of that action on EFH (50 CFR 600.920(e)(1)). The EFH Assessment is a necessary component for efficient and effective consultations between a federal action agency and NMFS. In the case of the project, work proposed would require

permitting under Section 10 of the RHA. For this permit action, the USACE is the lead federal action agency. An EFH Assessment for the proposed project is provided in a separate document.

## **5.5 IMPACTS TO WILDLIFE CORRIDORS**

As described above, the study area does not provide any specific wildlife movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. Consequently, impacts of the proposed project on wildlife corridors, movement of resident and migratory species, and usage of nursery sites are considered to be less than significant.

## **5.6 IMPACTS TO SENSITIVE WILDLIFE**

Table 5 provides a summary of sensitive animal species that have potential to occur within the study area. The following text expands on the likelihood of occurrence for these species, and describes potential impacts to sensitive species that may result from project implementation.

### **Fish**

Although two southern California steelhead were observed in Ballona Creek in 2008, this species is expected to have a less than reasonable likelihood of occurring due to the lack of suitable conditions, the species not being detected during recent surveys, and the study area being outside their known range, and therefore no impacts to steelhead are expected from the proposed project.

### **Reptiles**

Environmental threats to sea turtle populations include contamination from coastal runoff, plastic and other debris, fueling facilities, marina and dock construction, dredging, aquaculture, oil and gas exploration and extraction, and increased underwater noise and boat traffic that can degrade marine habitats used by marine sea turtles. As described in Section 5.2 above, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected for local species. Sea turtles swimming or feeding at or just beneath the surface of the water are particularly vulnerable to boat and vessel strikes, which can result in serious propeller injuries and death. Potential impacts to green sea turtle from the proposed project are primarily related to construction activities associated with barge placement and vessel traffic. Protective measures included in the project to minimize impacts to sea turtles include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to sea turtles are considered to be less than significant.

### **Marine Mammals**

Harbor seals and California sea lions are commonly observed in Santa Monica Bay. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the study area or vicinity, although they may make occasional transient use of the area. No in-water construction is anticipated, but vessel traffic will occur during barge placement and maintenance, and any marine mammals would be expected to leave the site for adjacent waters if disturbed by project activities. However, the MMPA prohibits “take” of marine mammals. The definition of “take” under the MMPA, like that of the ESA, includes “harassment”. For this reason, a potentially significant impact to marine mammals could occur if animals are disturbed during project activities, even if they are not harmed by the activities.

Similar to sea turtles, potential impacts to marine mammals from the proposed project are primarily related to project activities associated with vessel traffic. Marine mammals could be struck by boats or boat motors at the study area. In addition, boat noise generated during the installation period and operational activities, as well as, noise associated with the solar-powered operation of the water flow-through system are not expected to impact marine mammals or sea turtles. However, protective measures included in the project to minimize impacts to marine mammals include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to marine mammals are considered to be less than significant.

## 5.7 CUMULATIVE IMPACTS

Cumulative effects are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts can be derived from a single project or a number of separate projects, and is further defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Based on the definitions provided under CEQA, the following analysis assumes that a significant adverse cumulative biological resources impact would occur where the construction or operation of the cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, result in loss or fragmentation of sensitive habitats, or affect the functionality of a planned conservation area. As discussed above, no significant impacts to sensitive habitats or biological resource from the proposed project are anticipated, and any potential impacts to sensitive animals are reduced to less than significant by incorporation of protective measures during construction.

## 6.0 MITIGATION AND PROTECTIVE MEASURES

### 6.1 MARINE RESOURCE MITIGATION

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal rip rap revetment habitat since no in-water construction is proposed.

#### **Intertidal and Subtidal Unvegetated Habitat**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal unvegetated habitat since no in-water construction is proposed.

#### **Subtidal Vegetated Communities**

Based on current project design, no mitigation would be required for eelgrass since no eelgrass is present within the study area.

#### **Surface Coverage**

Based on current project design, no mitigation would be required for surface coverage since the project would result in a temporary small increase in surface coverage of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>).

### **Open Water**

Based on current project design, no mitigation would be required for open water habitat since no in-water construction is proposed.

## **6.2 SENSITIVE SPECIES MITIGATION**

### **Reptiles**

To mitigate potential impacts to eastern Pacific green sea turtles to a less than significant level, the following measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

### **Mammals**

To mitigate potential impacts to marine mammals to a less than significant level, the following construction measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

## **7.0 CONCLUSIONS**

The proposed project would be expected to result in limited impacts to in-water biota and habitats found in the study area. Construction is limited to upland construction in an urbanized area, with no in-water construction proposed, although it is anticipated that tug boats would be used for barge placement and maintenance, including the installation of mooring chain which is anticipated to run just below the waterline but not along the seafloor. Any impact associated with barge placement is anticipated to be of a short-term, temporary nature and is not expected to have permanent or population-level impact to sensitive habitat or species, EFH, or managed fish species. One potential impact may occur to marine reptiles (e.g., sea turtles) and marine mammals (e.g., California sea lion and harbor seal) which could be struck by boats or boat motors at the study area. Any disturbance to sea turtles or marine mammals is considered harassment and would be significant. While it is unlikely that sea turtles or marine mammals would occur in the study area, incorporation of the protection measures listed above would reduce any impacts to less than significant. No significant impacts to wetlands, upland habitat, wildlife migration or corridors are anticipated. Cumulative impacts are considered to be less than significant.

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**Ballona Creek Trash Interceptor™  
Pilot Project**

Biological Resources Technical Report

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## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT  
BIOLOGICAL RESOURCES TECHNICAL REPORT**

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## Acronyms and Abbreviations

BCWTF	Ballona Creek Watershed Task Force
BGEPA	Bald and Golden Eagle Protection Act
BRTR	Biological Resource Technical Report
BSA	Biological Study Area
BWER	Ballona Wetland Ecological Reserve
CCC	California Coastal Commission
CCH	Consortium of California Herbaria
CCMP	California Coastal Management Program
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCH	Designated Critical Habitat
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FGC	California Fish and Game Code
FMP	Fishery Management Plan
FR	Federal Register
GPS	Global Positioning System
JSA	Jurisdictional Survey Area



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Acronyms and Abbreviations

LSAA	Lake or Streambed Alteration Agreement
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MBTA	Migratory Bird Treaty Act
MCVII	second edition of <i>The Manual for California Vegetation</i>
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Ballona Creek Trash Interceptor™ Pilot Project
Public Works	Los Angeles County Public Works
RWQCB	Regional Water Quality Control Board
SEA	Significant Ecological Area
Secretary	Secretary of the Interior
SSC	Species of Special Concern
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WOTS	Waters of the State
WOTUS	Waters of the United States



## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT Biological Resources Technical Report

### 1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) is intended to document the biological resources that are associated with the Ballona Creek Trash Interceptor™ Pilot Project (Project) located in the City of Los Angeles, California (Appendix A, Figure 1). The surveys conducted and the discussions presented in this BRTR are intended to support planning and regulatory agency permitting and associated documentation. Reconnaissance surveys were conducted by Stantec biologists on February 25, 2020, and March 2, 2020, within accessible portions of the Project site and within a surrounding 500-foot buffer zone (approximately 102.0 acres). This approximate 102.0-acre area is defined as the Biological Study Area (BSA) (Appendix A, Figure 2). This BRTR describes the existing environmental conditions that occur within the BSA and surrounding areas and evaluates the potential for biological resources to occur based on those conditions, with a special emphasis on special-status plant and wildlife species, wildlife corridors, and special-status and sensitive natural communities.

### 1.1 PROJECT LOCATION

The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project. A photographic log is provided in Appendix B which depicts representative environmental conditions within the Project area.

The Project site is currently zoned as Open Space (OS-1XL), with a corresponding Open Space general plan land use designation by the City of Los Angeles. As Ballona Creek is an urban, soft bottom flood control channel within the Project site, the Project site is considered urbanized. The Project site is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats coming back to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the Ballona Creek North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop.

The area surrounding the Project site is predominantly zoned Medium Residential (to the south) and Open Space (to the north). Nearby uses include the Laguna Del Rey multi-family residential complex, Del Rey Lagoon (a lagoon and recreational space), the Ballona Wetlands Ecological Reserve (BWER), University of California Los Angeles Marina Aquatic Center, the Pacific Avenue Bridge, Dockweiler Beach (recreational and public use), and the entrance to the Marina del Rey Harbor. The Project would not be located within the BWER, which is approximately 0.22 mile to the northeast.



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## 1.2 PROJECT DESCRIPTION

On behalf of the Los Angeles County Flood Control District (Flood Control District), Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot Project to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. Construction and installation of the Project would occur over approximately a six-month period.

The purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment.

The floating Interceptor™ would be a single vessel moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15). Figure 1 shows the Project Location.

The proposed Project would involve the following primary activities:

- Constructing four Interceptor™ moorings, two trash boom moorings, and handrails on top of the adjacent jetties;
- Assembling the main Interceptor™ components in the parking lot adjacent to the public boat launch in the Marina del Rey harbor;
- Floating the Interceptor™ into position using a support vessel;
- Connecting the Interceptor™ and trash booms to the moorings;
- Attaching and detaching the second trash boom from its mooring as needed;
- Operating the Interceptor™ to collect floating trash from Ballona Creek and containerizing it in dumpsters inside the Interceptor™;
- Transferring the Interceptor™'s full dumpsters to Marina del Rey harbor for off-site disposal of trash at an appropriate solid waste facility;
- Transferring empty trash dumpsters from Marina del Rey harbor to the Interceptor™ in support of continued trash collection;
- Monitoring the effectiveness of the Interceptor™ at removing trash from Ballona Creek; and
- Installing educational signage communicating the Project's purpose/objectives to the public.

Additional information is provided below.



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##### **1.2.1 Construction of Moorings**

The Interceptor™ would be moored to the existing Ballona Creek North and South Jetties above the high water mark and above the mean high tide line of Ballona Creek using four mooring lines to maintain its position. These mooring lines would sag below the water surface using weights to allow boats to travel over them. The two smooth trash booms would be tethered via connection points on the Interceptor™ and two additional mooring points atop the jetties (for a total of six moorings). Each mooring would have a concrete pad which would be installed largely above-grade; minimal excavation to expose clean stone would be required for the moorings to be keyed into the top of the jetties at each location. Ramps with railings would be installed in connection with each mooring. During construction of the moorings on the Ballona Creek North Jetty, the sidewalk on the Ballona Creek North Jetty, between the Pacific Avenue Bridge and the end of the jetty, may need to be closed for public safety. While the Ballona Creek South Jetty does not have a dedicated concrete walkway, it is accessible to the public. Public access to portions of the Ballona Creek South Jetty may need to be blocked during construction of the moorings on the Ballona Creek South Jetty for public safety.

##### **1.2.2 Interceptor™ Assembly**

The Interceptor™ would be constructed off-site in the parking lot adjacent to the public boat launch in the Marina del Rey marina harbor.

##### **1.2.3 Trash Boom Operations**

The Interceptor™ would use two booms during anticipated high-trash flow events, and one boom in the dry season and when rowers will be expected to need an unrestricted path through the Pilot Project site. The southern boom would stay in place and the northern boom would be clipped and unclipped to the Ballona Creek North Jetty as needed. When not in use, the northern boom would be attached to the north-facing side of the Interceptor™ and “folded” in on itself (Photo 5). This allows the boom to float along the north-facing side of the Interceptor™ without interfering with any components or the operation of the Interceptor™.

##### **1.2.4 Trash Dumpster Removal and Disposal Process**

When the Interceptor™ is almost full, it will automatically send a message to the local operators to collect the waste. Operators will then slide the dumpster barge out from the Interceptor™, take it to the Marina del Rey boat harbor, lift and empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpster barge to the Interceptor™.

##### **1.2.5 Installation of Monitoring Equipment and Data Validation**

The monitoring system would be attached to the existing Pacific Avenue Bridge which crosses the Ballona Creek channel, approximately one-half-mile upstream from the mouth of Ballona Creek. Manually executed trawling experiments would be executed to calibrate and validate the monitoring system's measurements.



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## 2.0 METHODOLOGIES

This biological resources assessment of the BSA included, but was not limited to, a literature review, reconnaissance-level survey, non-protocol survey to detect the presence of special-status plant and wildlife species, and a non-protocol avian survey to document the presence of birds, including federal and state threatened or endangered listed species, if present. Stantec Associate Biologist Rocky Brown and Project Biologist Priya Pratap conducted the initial reconnaissance-level surveys on February 25, 2020, and March 2, 2020. Prior to the survey, a preliminary literature review of readily available resources was performed. The survey was conducted on foot within the BSA, where accessible, based on terrain and availability of public access.

### 2.1 LITERATURE REVIEW

A literature search focused on the BSA was conducted prior to the field survey. The BSA is located within the USGS Venice, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted in the BSA and a surrounding 10-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the BSA (CDFW 2020a). The database included portions of the following quadrangles surrounding the BSA:

- Topanga
- Beverly Hills
- Hollywood
- Inglewood
- Redondo Beach
- Torrance

Stantec obtained a list of federally listed species and species that are proposed, or are candidates for federal listing with the potential to occur in the vicinity of the project area, using the Information for Planning and Consultation tool on September 24, 2020 (Consultation Code: 08ECAR00-2020-SLI-1614). Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2020b)
- Special Animals List (CDFW 2020c)
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2020d)
- California Sensitive Natural Communities (CDFW 2020)
- Inventory of Rare and Endangered Vascular Plants of California (CNPS 2020)
- Consortium of California Herbaria (CCH 2020)



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## 2.0 Methodologies

**2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENT****2.2.1 Site Reconnaissance and Wildlife Surveys**

Stantec conducted a habitat assessment and reconnaissance-level surveys to document the environmental conditions present within the BSA. The primary goal of these initial surveys was to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources. Biologists recorded all incidental plant and wildlife observations. However, this assessment did not include focused, protocol-level surveys for rare plants or wildlife or other special-status resources.

The survey was conducted during a season and time of day when resident and migratory birds would be expected to be present and exhibiting normal activity, small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. The survey was conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95 degrees Fahrenheit). The February 25, 2020, survey was conducted during a period of low tide to allow biologists to observe Ballona Creek. The March 2, 2020, survey focused on nesting birds was conducted shortly after sunrise considering most birds are generally active at sunrise.

The BSA was investigated on foot (where accessible) by experienced field biologists walking throughout publicly accessible areas at an average pace of approximately one mile per hour while visually scanning for wildlife and their sign and listening to wildlife songs and calls. Biologists paused as necessary to listen for wildlife or to identify, record, or enumerate any observed species. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Species identifications conform to the most up-to-date field guides and technical literature.

**2.2.2 Vegetation Mapping**

Vegetation descriptions and nomenclature are based on the second edition of *A Manual of California Vegetation* (MCVII) (Sawyer et al. 2009), where applicable, and have been defined to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the ESRI Collector for ArcGIS app on an Apple iPad coupled with a Bad Elf GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ESRI ArcGIS (version 10.7) with aerial photograph base maps with an accuracy of 1 foot. Most boundaries shown on the maps are accurate within approximately 3 feet; however, boundaries between some vegetation types are less precise due to difficulties in interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. All vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to integrate on the landscape, without precise boundaries between



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them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.

- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.

**2.2.3 Jurisdictional Delineation**

A formal jurisdictional waters delineation per US Army Corps of Engineers (USACE) guidelines was conducted as part of this assessment. The four BSAs were evaluated for potential wetlands and/or waters subject to federal and/or state jurisdiction pursuant to Section 404 and 401 of the Clean Water Act (CWA) concurrently with the field surveys described above. This jurisdictional assessment also included an investigation of areas that could be jurisdictional pursuant to Section 1600 et seq. of the California Fish and Game Code. Prior to conducting the field assessment, Stantec reviewed current and historic aerial imagery, topographic maps, soil maps (USDA, 2020), local and state hydric soils lists, and the National Wetlands Inventory (USFWS, 2020a) to evaluate the potential active channels and wetland features that occur within the BSAs. During the field assessment, hydrologic features were mapped using the same data collection equipment described above for the botanical surveys. Field data were further manipulated in the office using GIS and total jurisdictional area for each regulatory jurisdiction was calculated. The results of the delineation are summarized below in Section 4.4; a stand-alone Preliminary Jurisdictional Wetlands/Waters Delineation Report was also prepared.



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## 3.0 REGULATORY ENVIRONMENT

### 3.1 FEDERAL REGULATIONS

#### 3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful “take” and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of Designated Critical Habitat (DCH). Under FESA, take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish and Wildlife Service (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 Code of Federal Regulations [CFR] Section 17.3).

DCH is defined in FESA Section 3(5)(A) as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features: (I) essential to the conservation of the species; (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for DCH must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*.

Activities that may result in “take” of listed species are regulated by USFWS.<sup>1</sup> USFWS produced an updated list of candidate species December 2, 2016 (81 Federal Register [FR] 87246). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

#### 3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code [USC] 703-711) makes it unlawful to possess, buy, sell, purchase, barter or take any migratory bird listed in Title 50 of CFR Part 10. Take is defined as possession or destruction of migratory birds, their nests, and eggs. Disturbances that cause nest abandonment or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. The MBTA encompasses whole birds, parts of birds, bird nests, and eggs.

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<sup>1</sup> The National Marine Fisheries Service (NMFS) regulates threatened and endangered marine species. Marine species were separately surveyed in the attached Marine Biological Technical Study (Appendix C).



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**3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)**

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

USFWS is the primary federal authority charged with the management of golden eagles in the U.S. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this Project. USFWS guidance on the applicability of current BGEPA statutes and mitigation is currently under review. On November 10, 2009, the USFWS updated rules (74 FR 46835) governing the take of golden and bald eagles. The new rules were released under the existing BGEPA, which has been the primary regulatory protection for unlisted eagle populations since 1940.

All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. If a permit is required, due to the current uncertainty on the status of golden eagle populations in the western U.S., it is expected that permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

**3.1.4 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for the conservation and management of the nation’s fishery resources through the preparation and implementation of Fishery Management Plans (FMPs). The Magnuson-Stevens Act calls for the National Marine Fisheries Service (NMFS) to work with regional Fishery Management Councils to develop FMPs for each fishery under their jurisdiction.

One of the required provisions of FMPs specifies that Essential Fish Habitat (EFH) be identified and described for the fishery, adverse fishing impacts on EFH be minimized to the extent practicable, and other actions to conserve and enhance EFH be identified. The act also mandates that NMFS coordinate with and provide information to federal agencies to further the conservation and enhancement of EFH. Federal agencies must consult with NMFS on any action that might adversely affect EFH. When NMFS finds that a federal or state action would adversely affect EFH, it is required to provide conservation recommendations. The Magnuson-Stevens Act applies to the Project since there is groundfish EFH within Ballona Creek. The EFH Assessment Report discusses these issues in more detail.

**3.1.5 Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with NMFS, USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in



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modification of a natural stream or body of water. Federal agencies must consider effects that these projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the Clean Water Act (concerning the discharge of dredged materials into navigable waters of the U.S. [WOTUS]) and Section 10 of the Rivers and Harbors Act (RHA) regarding obstructions in navigable waterways. NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. Since the Project involves impacts to waters of the U.S. and the potential modification of federal jetties, consultation with NMFS, USFWS and CDFW would be required.

#### 3.1.6 Federally Regulated Habitats

Areas that meet the regulatory definition of “waters of the United States” are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972). “Navigable waters of the United States” are subject to jurisdiction under Section 10 of the RHA (1899). WOTUS may include all waters used or potentially used for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as WOTUS, tributaries of waters otherwise defined as WOTUS, territorial seas, and wetlands (i.e., “Special Aquatic Sites”) adjacent to WOTUS (33 CFR, Section 328.3).

Construction activities within WOTUS are regulated by USACE. For example, the placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of State Water Quality Certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources.

#### 3.1.7 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires all federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA into other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision-making. NEPA requires federal agencies to review and comment on federal agency environmental plans and documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 USC 4321- 4327; 40 CFR 1500-1508).

#### 3.1.8 Rivers and Harbors Act of 1899

##### 3.1.8.1 Section 14

Section 14 of the RHA, codified at 33 U.S.C. § 408 (often referred to as “Section 408”), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters,



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improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project. USACE may grant such permission if it determines the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the civil works project. This means USACE has the authority to review, evaluate, and approve all alterations to federally-authorized civil works projects to make sure they are not harmful to the public and still meet the project's intended purposes mandated by congressional authorization.

The jetties currently bordering Ballona Creek are part of the Project and changes to them would require a Section 408 permit from the USACE prior to modification.

**3.1.8.2 Section 10**

Section 10 of the RHA is required for work conducted in, on, or over traditionally navigable waterways. A Section 10 permit is also required for the excavation and dredging or deposition of material, as well as any obstruction or alteration of a navigable water. Work outside the limits of navigable waters may require a Section 10 permit if the structure or work affects the course, location, condition, or capacity of the water body. Navigable waters of the U.S. are those subject to the ebb and flow of the tide shoreward to the mean high water mark and are used, or have been used in the past, to transport interstate or foreign commerce. 33 C.F.R. § 329.4. This includes coastal and inland waters, lakes, rivers and streams that are navigable, and the territorial seas.

The BSA contains potential navigable WOTUS subject to USACE jurisdiction under Section 10 of the RHA, as discussed in a separate Preliminary Jurisdictional Delineation Report.

**3.1.9 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) establishes national policy to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation's coastal zones. In accordance with Section 307(c) of the CZMA, after approval by the Secretary of Commerce of a state's management program, any applicant for a required federal license or permit to conduct an activity in or outside of the coastal zone affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program. The federal government certified the California Coastal Management Program (CCMP) in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976. All consistency documents are reviewed for consistency with these policies.

For all of the California coast except San Francisco Bay the state agency responsible for implementing the CZMA is the California Coastal Commission (CCC). The CCC is responsible for reviewing proposed federal and federally licensed or permitted activities to assess their consistency with the approved CCMP.



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## 3.2 STATE REGULATIONS

### 3.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes state policy to prevent significant and avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the CEQA Guidelines published by the California Natural Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

### 3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect state-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of take under the California Fish and Game Code (FGC). Additionally, the FGC contains lists of vertebrate species designated as “fully protected” (FGC Sections 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern (SSC) to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. SSC may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the FGC. FGC Section 3503.5 states that it is “unlawful to ‘take’, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to ‘take’, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Under Sections 3503 and 3503.5 of the FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited.

### 3.2.3 Section 1602 of the California Fish and Game Code

Section 1602 of the FGC requires any person, state or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. This



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includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW would determine whether the proposed project may impact fish or wildlife resources.

If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be required. A completed CEQA document must be submitted to CDFW before an LSAA would be issued. The Project area falls within the South Coast Region of the CDFW; however, it is not anticipated to substantially divert or obstruct the natural flow of Ballona Creek, nor to substantially change the channel or streambed of the Creek.

**3.2.4 Porter-Cologne Water Quality Control Act**

California Regional Water Quality Control Boards (RWQCBs) regulate the “discharge of waste” to “waters of the state” (WOTS). All projects proposing to discharge waste that could affect WOTS must file a Waste Discharge Report with the appropriate RWQCB. The board responds to the report by issuing Waste Discharge Requirements or by waiving them for that project discharge. Both terms “discharge of waste” and WOTS are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered WOTUS, as defined by Section 404 of the CWA, are addressed under the Porter Cologne Water Quality Control Act. The Project area falls under the jurisdiction of the Region 4 – Los Angeles RWQCB.

**3.2.5 State-Regulated Habitats**

The California State Water Resources Control Board is the state agency (together with the RWQCBs) charged with implementing water quality certification in California. See section 3.1.6 above.

**3.2.6 Native Plant Protection Act**

Under FGC Sections 1900 to 1913, the Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. A Project applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of the NPPA and sections of CEQA that apply to rare or endangered plants.

**3.2.7 California Coastal Commission and Coastal Act of 1976**

The CCC has planning, regulatory, and permitting responsibilities in partnership with local governments over all development taking place within the coastal zone, a 1.5 million-acre area stretching 1,100 miles along the state's coastline from Oregon to Mexico (and around nine offshore islands). The coastal zone



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extends seaward 3 miles, while its landward boundary varies from several miles inland in places such as the Eel River and the Elkhorn Slough, to as close as a few hundred feet from the shore in other areas.

The CCC's enabling legislation, the Coastal Act of 1976, created a comprehensive coastal protection program grounded in partnerships between CCC and local government jurisdictions (15 counties and 60 cities) within the coastal zone. Among the coastal resources specifically protected within the Coastal Act are public access to the coastline, wetlands and other environmentally sensitive habitat areas, agriculture, low-cost visitor-serving recreational uses, visual resources, commercial and recreational fishing, and community character. Coastal streams and wetlands are also protected under the Coastal Act.

The Coastal Act Section 30231 defines a wetland as:

*...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*

The CCC's regulations (CCR Title 14) establishes a "one parameter definition," which requires evidence of a single parameter to establish wetland conditions:

*Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. (14 CCR Section 13577).*

The "one parameter" definition adopted by the Coastal Commission is based on the general definition used by USFWS and CDFW from the USFWS wetlands classification system first published in 1979 (Cowardin et al. 1979):

*Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.*

The Coastal Act definition of a wetland does not distinguish between wetlands based on their quality. Therefore, under the Coastal Act, poorly functioning or degraded areas that meet the definition of wetlands are subject to wetland protection policies.



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### 3.3 LOCAL REGULATIONS

#### 3.3.1 Los Angeles County General Plan – Chapter 9, Conservation and Natural Resources Element

##### 3.3.1.1 Open Space Resources Component

The Open Space Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and programs that are designed to preserve and manage dedicated open space areas through preservation, acquisition, and easements.

The Goals and Policies relative to natural resources that apply to the BSA are as follows:

**Goal 1:** *Open space areas that meet the diverse needs of Los Angeles County*

- **Policy 1.2:** *Protect and conserve natural resources, natural areas, and available open spaces*
- **Policy 1.5:** *Provide and improve access to dedicated open space and natural areas for all users that considers sensitive biological resources*

##### 3.3.1.2 Biological Resources Component

The Biological Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and practices which are designed to preserve biotic diversity, monitor Significant Ecological Areas (SEAs), and coordinate environmental protection.

The Goals and Policies relative to biological resources that apply to the BSA are as follows:

**Goal 3:** *Permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands, alpine habitat, chaparral, shrublands, and SEAs.*

- **Policy 3.1:** *Conserve and enhance the ecological function of diverse natural habitats and biological resources*
- **Policy 3.3:** *Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function- acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.*
- **Policy 3.6:** *Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.*
- **Policy 3.7:** *Participate in inter-jurisdictional collaborative strategies that protect biological resources.*



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- **Policy 3.11:** *Discourage development in riparian habitats, streambeds, wetlands, and other native woodlands in order to maintain and support their preservation in a natural state, unaltered by grading, fill, or diversion activities.*

#### 3.3.1.3 Local Water Resources Component

The Local Water Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and practices that are designed to effectively manage and preserve invaluable local water resources.

The Goals and Policies relative to local water resources that apply to the BSA are as follows:

**Goal 5:** *Protected and useable local surface water resources.*

- **Policy 5.1:** *Support the LID philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distributions of naturalistic BMPs at regional, neighborhood, and parcel-level scales.*
- **Policy 5.4:** *Actively engage in implementing all approved Enhanced Watershed Management Programs/Watershed Management Programs and Coordinated Integrated Monitoring Programs/ Integrated Monitoring Programs or other County-involved TMDL implementation and monitoring plans.*
- **Policy 5.6:** *Minimize point and non-point source water pollution.*
- **Policy 5.7:** *Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals.*

#### 3.3.1.4 Significant Ecological Area Program

Significant Ecological Areas are officially designated areas within LA County with irreplaceable biological resources. The SEA Program objective is to conserve genetic and physical diversity within Los Angeles County by designating biological resource areas that are capable of sustaining themselves into the future. The SEA Program establishes the permitting, design standards, and review process for development within SEAs, balancing preservation of the county's natural biodiversity with private property rights (Los Angeles County 2019). The BSA does not occur within a SEA, but the BWER extends approximately two miles east-northeast of the BSA.

#### 3.3.2 Los Angeles County Public Works Ballona Creek Watershed Management Plan

The Ballona Creek Watershed Management Plan was created by the LACPW to “set forth pollution control and habitat restoration actions to achieve ecological health.”

The Ballona Creek Watershed Task Force adopted the following goals:



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- Improve quality of surface water and groundwater
- Maintain flood protection
- Restore hydrologic function to Ballona Creek and tributaries where feasible
- Optimize water resources to reduce dependence on imported water
- Improve aquatic, estuarine, and riparian habitat quality and quantity
- Improve habitat quality, quantity, and connectivity
- Practice stewardship of the landscape

As previously stated in Section 1.2, the purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment. The Project supports the goals of the Ballona Creek Watershed Management Plan to improve quality of surface water and improve aquatic and estuarine habitat quality and quantity.

**3.3.3 City of Los Angeles General Plan**

The City of Los Angeles General Plan provides a comprehensive long-range view of the city and includes a Land Use Element that is made up of 35 community plans and 10 technical elements. The pertinent technical elements include a Conservation Element and an Open Space Element.

**3.3.3.1 Conservation Element**

The Conservation Element primarily addresses preservation, conservation, protection, and enhancement of the City's natural resources. The natural resources or processes that should be or are subject to preservation, conservation, protection, and enhancement efforts include endangered species such as the Belding's savannah sparrow, which lives within the Project site; erosion, including beach erosion; fisheries; habitats, including coastal wetlands; and open space and parks. In addition, the Conservation Element identifies applicable regulations and the Conservation Element policies with regard to each type of resource.

**3.3.3.2 Open Space Element**

The Open Space Element consists of an Open Space Plan that serves to guide the identification, preservation, conservation, and acquisition of open space within the City of Los Angeles. The Open Space Plan was adopted in 1973; an update is pending. The Del Rey Lagoon portion of the BSA supports several of the characteristics used to define "Open Space" in the Open Space Element of the City's General Plan. Specifically, they provide "opportunities for recreation and education" and conserve or preserve "natural resources or ecologically important areas."



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### **3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS**

#### **3.4.1 California Native Plant Society Rare Plant Program**

The mission of the California Native Plant Society (CNPS) Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) is entered into the online CNPS Rare Plant Inventory and given a California Rare Plant Rank (CRPR). The Rare Plant Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under state endangered species legislation, are defined by the following CRPRs:

- CRPR 1A: Plants considered by the CNPS to be extinct in California
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3: Plants about which we need more information – a review list
- CRPR 4: Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 0.1 to 0.3 ranking, with 0.1 being the most endangered and 0.3 being the least endangered and are described as follows:

- 0.1: Seriously threatened in California (high degree/immediacy of threat)
- 0.2: Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3: Not very threatened in California (low degree or immediacy of threats or no current threats known)



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### 4.1 SETTING

As depicted in Figures 1 and 2 in Appendix A, the BSA is located at the confluence of Ballona Creek and Santa Monica Bay. In general, the BSA is characterized by Ballona Creek, which is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap. The mouth of Ballona Creek empties into the Santa Monica Bay south of Marina del Rey and Venice Beach, and north of the community of Playa del Rey and Dockweiler Beach. The channel mouth is approximately 295 feet wide. The elevation of the channel’s bottom at the Project site ranges from -2.2 to +7.8 feet with respect to mean sea level.

The Ballona Creek watershed covers approximately 130 square miles within the Los Angeles Basin. With headwaters in the Santa Monica Mountains, the principal tributaries to the Ballona Creek are the Benedict Canyon Channel, Sepulveda Creek Channel, Centinela Creek Channel, and immense system of underground storm drains (ESA, 2017). Ballona Creek flows through the Ballona Wetlands Ecological Reserve within the coastal plain of the Los Angeles Basin at an elevation of approximately 5 to 28 feet (USACE, 1999). The reach of the Ballona Creek has a design flow rate of 46,000 cubic feet per second. The watershed upstream of the SA is approximately 20 percent undeveloped foothill and canyon area and 80 percent highly urbanized coastal plain, including the densely developed communities of Beverly Hills, Culver City, Hollywood, and a portion of the City of Los Angeles (USACE, 1999). The flood risk management channel provides support for approximately 1.5 million residents of the listed cities.

The BSA is situated within the unincorporated communities of Marina del Rey and Playa del Rey, within the City of Los Angeles. It encompasses the northernmost portion of the Del Rey Lagoon and Dockweiler State Beach, the Ballona Creek Bridge, multi-unit residential buildings, and a southern section of the Marina del Rey South Jetty and Marina del Rey Main Channel. The land within the BSA is nearly completely developed with urban infrastructure and open space with recreational and public use facilities or consists of open water. Nearby uses include a functioning small-craft harbor with boat slips, multi-unit residential buildings, single-family homes, Del Rey Lagoon; the BWER, Ballona Creek Bridge, and the University of California Los Angeles Marina Aquatic Center. Open space to the north, east, and south of the BSA includes Dockweiler State Beach, Venice City Beach, Del Rey Lagoon, and the BWER. A photographic log for the survey is included in Appendix B and depicts representative environmental conditions within the BSA and surrounding areas.

### 4.2 VEGETATION AND LAND COVERS

As defined in MCVII, a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition,



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and reflects the effects of local climate, soil, water, disturbance, and other environmental factors” (Sawyer et al. 2009). Generally, Stantec’s mapping and description of plant communities follows the classification system described in the MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, no native habitat occurs within the BSA. Therefore, the vegetation community land cover types discussed below are descriptive in nature and are not specifically referenced in the MCVII. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

Recent technical studies for biological resources, specifically vegetation mapping, have been conducted in support of the Ballona Wetlands Restoration Project currently proposed by CDFW. The extent of these surveys overlap with portions of the BSA. The Draft EIR prepared for the Ballona Wetlands Restoration Project (ESA 2017) was used to define some of the vegetation classifications that occur within the BSA that are not defined in MCVII. These classifications are described below and depicted in Figure 2 (Appendix A).

Habitats observed within the BSA during the field survey, where vegetated, were comprised primarily of common plant species and vegetation communities found in the coastal areas of southern California. Habitat conditions within the vegetated portions of the BSA were noted to be of generally good quality, with well-established communities comprised of native and non-native shrub and herbaceous species. Within the BSA, Stantec biologists mapped one plant community defined by Sawyer et al. (2009), one plant community defined by the Ballona Wetlands Restoration Project Draft EIR (ESA 2017), and three land cover types. These are described below, summarized in Table 1, and depicted in Figure 2 included in Appendix A. Small, localized areas occupied by other plant communities were also observed within the BSA; however, the areas were less than the minimum mapping unit dictated by the size of the survey area and thus, were not mapped.

**Table 1: Vegetation Communities and Land Cover Types Occurring within the Biological Study Area and Impacts**

<b>Vegetation Community/Land Cover Type</b>	<b>Acreage within BSA</b>	<b>Acreage of Permanent Project Impacts</b>	<b>Acreage of Temporary Project Impacts</b>
Invasive Monoculture	2.76	-	-
Pickleweed Mats Alliance	0.24	-	-
Ice Plant Mats Alliance	0.46	-	-
Dune Mat Alliance	0.41	-	-
Open Water	55.96	-	-
Sandy Beach	7.30	-	-
Disturbed and Developed	34.88	0.14	-
<b>Total</b>	<b>102.00</b>	<b>0.14</b>	-



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**4.2.1 Vegetation Communities and Land Cover Types**

**4.2.1.1 Vegetation Communities**

**Invasive Monoculture**

Approximately 2.76 acres of this community occurs within the BSA, in the upland area of Ballona Creek and along the Del Rey Lagoon. In the Draft Environmental Impact Report for the Ballona Wetlands Restoration Project, invasive monoculture is described as follows:

*...monocultures or very low-diversity assemblages of invasive herbs and shrubs including black mustard (*Brassica nigra*), crown daisy (*Glebionis coronaria*), wild radish (*Raphanus sativus*) ... pampas grass (*Cortaderia spp.*), carnation spurge (*Euphorbia terracina*), and castor bean (*Ricinus communis*). In addition, small, fragmented groups of non-native trees, primarily thorn tree and lollypop tree (*Myoporum laetum*), are included in this habitat type. Invasive monocultures are common across the BWER within many upland habitat types. However, they are most often located in areas with introduced fill (e.g., berms or upland fill areas). (ESA 2017)*

Within the BSA, plant species observed within this community included black mustard, crown daisy, radish, pampas grass, and carnation spurge. Small Philippine acacia (*Acacia confusa*), Brazilian peppertree (*Schinus terebinthifolia*), tree tobacco (*Nicotiana glauca*), sweet alyssum (*Lobularia maritima*), ribwort plantain (*Plantago lanceolata*), broadleaf plantain (*Plantago major*), shortpod mustard (*Hirschfeldia incana*), common sowthistle (*Sonchus oleraceus*), barley (*Hordeum sp.*), Bermuda buttercup (*Oxalis pes-caprae*), and wild fennel (*Foeniculum vulgare*) were also observed within this community.

**4.2.1.2 Pickleweed Mats Alliance**

Approximately 0.24 acre of this vegetation community occurs within the BSA, primarily along the margins of the Del Rey Lagoon and banks of Ballona Creek. This alliance is represented within the BSA by Pacific pickleweed (*Salicornia pacifica*) as the dominant species in the subshrub and herbaceous layers with algae and interspersed with ice plant (*Carpobrotus edulis*). This alliance is generally found to occur in coastal salt marshes and alkaline flats.

**4.2.1.3 Ice Plant Mats Alliance (*Mesembryanthemum spp.* - *Carpobrotus spp.* Herbaceous Semi-Natural Alliance)**

Approximately 0.46 acre of this vegetation community occurs within the BSA along the margins of Del Rey Lagoon, the southern bank of Ballona Creek, and along the coastal sand dunes immediately south of the creek bordering a residential community. Within the BSA, the alliance is represented by continuous stands of Chilean sea fig (*Carpobrotus chilensis*) and ice plant (*Carpobrotus edulis*) as the dominant species in the herbaceous layers. It is interspersed with occurrences of beach suncup (*Camissoniopsis cheiranthifolia*), European searocket (*Cakile maritima*), tree aeonium (*Aeonium arboreum*), cheeseweed mallow (*Malva parviflora*), and jade plant (*Crassula ovata*). This alliance is generally found to occur in bluffs, disturbed, land, and sand dunes of immediate coastlines.



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**4.2.1.4 Dune Mat Alliance (*Abronia latifolia* - *Ambrosia chamissonis* Herbaceous Alliance)**

Approximately 0.41 acre of this vegetation community occurs within the BSA. It primarily occurs along the margins of Dockweiler State Beach and the jetty within the outer rocky outcrops of Ballona Creek and the sandy beach surfaces immediately south of the creek. Within the BSA, this alliance is represented by silver burr ragweed (*Ambrosia chamissonis*) and European searocket (*Cakile maritima*) as the dominant species. Lesser sea-spurry (*Spergularia marina*), common stork's-bill (*Erodium cicutarium*), prostrate knotweed (*Polygonum aviculare*), and rigput brome (*Bromus diandrus*) are interspersed throughout this community. This alliance is generally found to occur in sand dunes of coastal bars, river mouths, and spits along the immediate coastline with coarse to fine-textured sands.

**4.2.1.5 Other Land Cover Types**

**Open Water**

Approximately 55.96 acres of open water habitat occurs in the Ballona Creek channel, Marina del Rey Harbor Main Channel, and Del Rey Lagoon within the BSA. The Ballona Creek channel within the BSA is a concrete and riprap channelized system with a soft sediment bottom. The Main Channel supports the passage of small and large watercrafts through the harbor. Del Rey Lagoon, a small coastal saline pond separated from Ballona Creek by a 40-foot-wide levee, has a manually controlled tidal gate, which exists at the north end of the lagoon and connects to a tidally influenced portion of Ballona Creek that enables periodic water exchange (MBC et al. 2016). The open water habitat is generally unvegetated, although a narrow fringe of herbaceous vegetation is occasionally present along the banks of Ballona Creek exposed during low tide.

**Sandy Beach**

Approximately 7.30 acres of the BSA includes a portion of the northern section of Dockweiler State Beach. This area is heavily disturbed and used as a recreational space, including a paved bicycle path that intersects the beach. The area is dominated by fine sands and is generally unvegetated due to the level of disturbance and its associated recreational and public use facilities.

**Disturbed and Developed**

This land cover type was used to map approximately 34.88 acres of the BSA that are developed, including multi-unit residential buildings, paved and unpaved roadways and paths, a pedestrian bridge, the Ballona Creek North and South Jetties, landscaped areas, and developed recreational spaces. In general, these areas are unvegetated or contain ornamental vegetation, such as the areas surrounding Del Rey Lagoon and residential landscaped areas. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil. These include non-native grasses and forbs such as soft brome (*Bromus hordeaceus*), rigput brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), and bristly oxtongue (*Helminthotheca echioides*).



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**4.2.2 Common Plant Species Observed**

Plants observed during the February and March 2020 reconnaissance-level surveys were recorded; however, a focused, floristic-level survey was not conducted. The reconnaissance-level surveys resulted in the documentation of 79 species of native and non-native plants within the BSA, a detailed list of which is provided in Table 2.

**Table 2: Plant Species Observed in the Biological Study Area**

Scientific Name	Common Name
<i>Acacia confusa</i> *	small Philippine acacia
<i>Achillea millefolium</i>	common yarrow
<i>Aeonium arboreum</i> *	tree aeonium
<i>Agapanthus praecox</i> *	lily of the Nile
<i>Agave attenuata</i> *	lion's tail
<i>Ageratina altissima</i> *	white snakeroot
<i>Aloe arborescens</i> *	candelabra aloe
<i>Ambrosia chamissonis</i>	silver burr ragweed
<i>Archontophoenix cunninghamiana</i> *	king palm
<i>Artemisia californica</i>	California sagebrush
<i>Asparagus aethiopicus</i> *	asparagus fern
<i>Atriplex lentiformis</i>	big saltbush
<i>Baccharis pilularis</i>	coyote brush
<i>Bellis perennis</i> *	common daisy
<i>Bougainvillea glabra</i> *	paper flower
<i>Brassica nigra</i> *	black mustard
<i>Bromus diandrus</i> *	ripgut brome
<i>Bromus hordeaceus</i> *	soft brome
<i>Cakile maritima</i> *	European searocket
<i>Camissoniopsis cheiranthifolia</i>	beach suncup
<i>Capsella bursa-pastoris</i> *	shepherd's purse
<i>Carissa macrocarpa</i> *	natal plum
<i>Carpobrotus chilensis</i> *	Chilean sea fig
<i>Carpobrotus edulis</i> *	ice plant
<i>Chenopodium murale</i> *	nettle-leaved goosefoot
<i>Claytonia sibirica</i> *	pink purslane
<i>Cleomella arborea</i> *	bladderpod
<i>Commelina benghalensis</i> *	Benghal dayflower



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Scientific Name	Common Name
<i>Cortaderia selloana</i> *	pampas grass
<i>Crassula ovata</i> *	jade plant
<i>Croton californicus</i>	California croton
<i>Curio repens</i> *	blue chalksticks
<i>Cynodon dactylon</i> *	Bermuda grass
<i>Datura stramonium</i> *	jimson weed
<i>Encelia californica</i>	California brittlebush
<i>Erodium cicutarium</i> *	common stork's-bill
<i>Eschscholzia californica</i>	California poppy
<i>Euphorbia terracina</i> *	Geraldton carnation spurge
<i>Ficus microcarpa</i> *	curtain fig
<i>Foeniculum vulgare</i> *	wild fennel
<i>Glebionis coronaria</i> *	crown daisy
<i>Helminthotheca echioides</i> *	bristly oxtongue
<i>Heterotheca grandiflora</i>	telegraphweed
<i>Hirschfeldia incana</i> *	shortpod mustard
<i>Hordeum</i> sp.	barley
<i>Isocoma menziesii</i>	Menzie's goldenbush
<i>Juniperus horizontalis</i> *	creeping juniper
<i>Lantana camara</i> *	common lantana
<i>Lampranthus spectabilis</i> *	trailing iceplant
<i>Lobularia maritima</i> *	sweet alyssum
<i>Lotus scoparius</i>	common deerweed
<i>Malva parviflora</i> *	cheeseweed
<i>Melilotus indicus</i> *	annual yellow sweetclover
<i>Nicotiana glauca</i> *	tree tobacco
<i>Oxalis stricta</i>	common yellow oxalis
<i>Oxalis pes-caprae</i> *	Bermuda buttercup
<i>Phoenix canariensis</i> *	Canary Island date palm
<i>Phormium tenax</i> *	New Zealand flax
<i>Pittosporum</i> sp.	cheesewood
<i>Plantago lanceolata</i> *	ribwort plantain
<i>Plantago major</i> *	broadleaf plantain
<i>Platyclusus orientalis</i> *	Oriental arborvitae



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Scientific Name	Common Name
<i>Polygonum aviculare</i> *	prostrate knotweed
<i>Prunus persica</i> *	peach
<i>Pseudognaphalium californicum</i>	California rabbit tobacco
<i>Raphanus sativus</i> *	cultivated radish
<i>Rhaphiolepis indica</i> *	Indian hawthorn
<i>Salicornia pacifica</i> *	Pacific pickleweed
<i>Salvia leucantha</i> *	Mexican bush sage
<i>Schiuus terebinthifolia</i> *	Brazilian peppertree
<i>Sedum dendroideum</i> *	tree stonecrop
<i>Soliva sessilis</i> *	field burweed
<i>Sonchus oleraceus</i> *	common sow thistle
<i>Spergularia marina</i>	lesser sea spurry
<i>Strelitzia reginae</i> *	bird of paradise
<i>Syagrus romanzoffiana</i> *	queen palm
<i>Taraxcum</i> sp.	dandelion
<i>Trifolium repens</i> *	white clover
<i>Washington robusta</i> *	Mexican fan palm

\* Non-native Species

### 4.3 COMMON WILDLIFE

This section describes the common wildlife observed during the reconnaissance survey and those species expected to occur within the BSA based on habitat characteristics and species known to occur in the region.

#### 4.3.1 Terrestrial Invertebrates

As in all ecological systems, invertebrates inhabiting the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food sources for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. Though heavily urbanized, habitat conditions within the BSA provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates that are known to adapt to such disturbance. A focused insect survey was not performed within the BSA for this Project; however, a variety of common insects were observed during the reconnaissance survey, including species from the following orders: Araneidae (spiders), Coleoptera (beetles), Diptera (flies and mosquitoes), Lepidoptera (moths and butterflies), Odonata (dragonflies and damselflies), Hemiptera (true bugs), and Hymenoptera (wasps, bees and ants).



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##### 4.3.2 Fish

Recent surveys conducted along the lower reaches of Ballona Creek as part of baseline studies for the Ballona Wetlands Restoration Project (Johnston et al. 2012) identified several fish species that would be expected to occur within the BSA. The most common fish observed was California halibut (*Paralichthys californicus*). Other species observed included California lizardfish (*Synodus lucioceps*), kelp bass (*Paralabrax clathratus*), giant kelpfish (*Heterostichus rostratus*), diamond turbot (*Hypsopsetta guttulata*), striped mullet (*Mugil cephalus*), California killifish (*Fundulus parvipinnis*), and topsmelt (*Atherinops affinis*). Two southern California steelhead (*Oncorhynchus mykiss irideus*) individuals were observed in Ballona Creek (upstream of the Ballona Reserve) in 2008 (Johnston et al. 2011); the BSA and upstream areas do not support suitable spawning habitat. EFH is mapped within the BSA for several fish species and is discussed further in an EFH report.

##### 4.3.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), which is generally not present within the BSA, could provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Aubry et al. 1988; Maser and Trappe 1984).

Amphibian species were not observed during the reconnaissance surveys within the BSA. Species not observed in the BSA but known to occur in the area, particularly within the BWER, include the Baja California treefrog (*Pseudacris hypochondriaca*), garden slender salamander (*Batrachoseps major*), common slider (*Trachemys scripta*), and the non-native American bullfrog (*Lithobates catesbeiana*). Based on the tidal influence within the BSA, amphibians would not be expected to be permanent residents in this section of Ballona Creek, though there is a low possibility that they may be present as transients associated with storm drains entering the creek within the BSA.

##### 4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrates, soil types, and presence of refugia such as rock piles, boulders, and native debris. Many reptile species, even if present, are difficult to detect because they are cryptic and their behavioral characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most species take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation, where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Weather conditions during the survey were favorable for reptile activity.



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The only reptiles observed during the site reconnaissance were western fence lizards (*Sceloporus occidentalis*) and a side-blotched lizard (*Uta stansburiana*). Although not observed, several other common reptiles are known to occur in the area and may occur in portions of the BSA, particularly associated with the BWER to the east of the BSA (Johnston et al. 2011). These include the southern alligator lizard (*Elgaria multicarinata*), San Diegan legless lizard (*Anniella stebbinsi*), western rattlesnake (*Crotalus oreganus*), gopher snake (*Pituophis catenifer*), and California kingsnake (*Lampropeltis getula californiae*).

#### 4.3.5 Birds

Birds were identified by sight and were observed throughout the BSA, especially shorebirds and other waterfowl foraging within the tidally influenced Ballona Creek. Waterfowl observed included mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), greater scaup (*Aythya marila*), American wigeon (*Mareca americana*), marbled godwit (*Limosa fedoa*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), cattle egret (*Bubulcus ibis*), brown pelican (*Pelecanus occidentalis*), ruddy turnstone (*Arenaria interpres*), red-breasted merganser (*Mergus serrator*), eared grebe (*Podiceps nigricollis*), western grebe (*Aechmophorus occidentalis*), red-throated loon (*Gavia stellata*), black-crowned night heron (*Nycticorax nycticorax*), double-crested cormorant (*Phalacrocorax auratus*), Brandt's cormorant (*Phalacrocorax penicillatus*), willet (*Tringa semipalmata*), least sandpiper (*Calidris minutilla*), Canada goose (*Branta canadensis*), California gull (*Larus californicus*), herring gull (*Larus argentatus*), and ring-billed gull (*Larus delawarensis*). Upland birds would not be expected to permanently inhabit the BSA due to lack of significant cover and nesting opportunities, except within the BWER and Del Rey Lagoon. Upland bird species observed included belted kingfisher (*Megaceryle alcyon*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), Allen's hummingbird (*Selasphorus sasin*), Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), American bushtit (*Psaltriparus minimus*), cliff swallow (*Petrochelidon pyrrhonota*), turkey vulture (*Cathartes aura*), and California towhee (*Melospiza crissalis*). Others that may be expected to occur include savannah sparrow (*Passerculus sandwichensis*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), surfbird (*Calidris virgata*), royal tern (*Thalasseus maximus*), pied-billed grebe (*Podilymbus podiceps*), and black oystercatcher (*Haematopus bachmani*).

#### 4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas).

Terrestrial and marine mammal species observed during the surveys included California ground squirrels (*Otospermophilus beecheyi*), pocket gophers (*Geomysidae* sp.), Virginia opossum (*Didelphis virginiana*), rat (*Rattus* sp.), domestic dogs (*Canis familiaris*), Pacific harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), and a pair of bottlenose dolphins (*Tursiops truncatus*). A number of common mammals habituated to urban environments may move through the BSA, including smaller marine



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mammals, desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and domestic species such as house cats (*Felis catus*).

Although bats were not detected in the BSA, they may forage and roost in the riparian corridors in the region where insect abundance is high (CDFW, 2000). Because this type of foraging habitat does not occur within Ballona Creek, it is unlikely that bats permanently inhabit or forage in significant numbers in the BSA; although not within the BSA, bats may roost on some of the bridges present up- and downstream of the BSA.

All wildlife species observed within the BSA are summarized in Table 3.

**Table 3: Wildlife Species Observed in the BSA**

Scientific Name	Common Name
<b>Invertebrates</b>	
Aranidae sp.	spiders
Coleoptera sp.	beetles
Diptera sp.	flies and mosquitoes
Hemiptera sp.	true bugs
Hymenoptera sp.	wasps, bees and ants
Lepidoptera sp.	moths and butterflies
Odonata sp.	dragonflies and damselflies
<b>Reptiles</b>	
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Uta stansburiana</i>	side-blotched lizard
<b>Birds</b>	
<i>Aechmophorus occidentalis</i>	western grebe
<i>Ardea alba</i>	great egret
<i>Ardea herodias</i>	great blue heron
<i>Arenaria interpres</i>	ruddy turnstone
<i>Anas platyrhynchos</i>	mallard
<i>Aythya marila</i>	greater scaup
<i>Branta canadensis</i>	Canada goose
<i>Bubulcus ibis</i>	cattle egret
<i>Calidris minutilla</i>	least sandpiper
<i>Calypte anna</i>	Anna's hummingbird
<i>Cathartes aura</i>	turkey vulture



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Scientific Name	Common Name
<i>Columba livia</i>	rock pigeon
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
<i>Egretta thula</i>	snowy egret
<i>Fulica americana</i>	American coot
<i>Gavia stellata</i>	red-throated loon
<i>Haemorhous mexicanus</i>	house finch
<i>Larus argentatus</i>	herring gull
<i>Larus californicus</i>	California gull
<i>Larus delawarensis</i>	ring-billed gull
<i>Limosa fedoa</i>	marbled godwit
<i>Mareca americana</i>	American wigeon
<i>Megaceryle alcyon</i>	belted kingfisher
<i>Melospiza crissalis</i>	California towhee
<i>Mergus serrator</i>	red-breasted merganser
<i>Nycticorax nycticorax</i>	black-crowned night heron
<i>Passer domesticus</i>	house sparrow
<i>Pelecanus occidentalis</i>	brown pelican
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<i>Phalacrocorax auratus</i>	double-crested cormorant
<i>Phalacrocorax penicillatus</i>	Brandt's cormorant
<i>Podiceps nigricollis</i>	eared grebe
<i>Psaltriparus minimus</i>	American bushtit
<i>Selasphorus sasin</i>	Allen's hummingbird
<i>Sturnus vulgaris</i>	European starling
<i>Tringa semipalmata</i>	willet
<i>Zenaidura macroura</i>	mourning dove
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<b>Mammals</b>	
<i>Canis familiaris</i>	domestic dog
<i>Didelphis virginiana</i>	Virginia opossum
<i>Geomyidae</i> sp.	pocket gopher
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Phoca vitulina</i>	Pacific harbor seal



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Scientific Name	Common Name
<i>Rattus sp.</i>	rat
<i>Tursiops truncatus</i>	bottlenose dolphin
<i>Zalophus californianus</i>	California sea lion

#### 4.4 JURISDICTIONAL WATERS/WETLANDS

There are four key agencies that regulate activities within inland streams, wetlands, and riparian areas in California, including the coastal zone: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA and Section 10 of the Rivers and Harbors Act; the CDFW regulates activities under the FGC Sections 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

As the Project occurs within the Coastal Zone, development may not proceed until CCC issues a Coastal Development Permit for the Project, which would require that the Project adhere to the policies of the California Coastal Act.

Five types of jurisdictional features have been documented within the Jurisdictional Survey Area (JSA), which includes the Project site and a 100-foot buffer, and the Project site: Waters of the U.S, USACE Section 10 waters, Waters of the State, CCC wetlands, and CDFW jurisdictional waters and are depicted in Figure 3 of Appendix A. Jurisdictional areas are summarized in Table 4. Further analysis of jurisdictional waters is provided in a separate Jurisdictional Delineation Report.

**Table 4: Jurisdictional Features and Project Impacts in the Jurisdictional Survey Area**

Waters of the U.S (Section 404).		CDFW Jurisdictional Waters		Waters of the State		CCC Wetlands		USACE Section 10 Waters	
SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area
14.24	0.023	15.93	0.023	15.93	0.023	14.24	0.023	14.24	0.023

\* All reported impacts are in acres

#### 4.5 SOILS

Prior to conducting the delineation, historic soils data from the Natural Resources Conservation Service was used to determine potential soil types that may occur with the BSA; this data was used to determine where hydric soils have historically occurred (Appendix A, Figure 4). Table 5 identifies the soils historically known to occur within the BSA and provides a summary of characteristics of these soils.



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**Table 5: Historic Soil Units Occurring within the Biological Survey Area\***

Map Unit Symbol	Map Unit Name	Description	Acres within BSA
1100	Urban land, 0 to 2 percent slopes, dredged fill substratum	Associated with islands and spits at elevations between 0 and 20 feet; very high runoff; 0 inches to manufactured layer.	28.70
1150	Abaft-Beaches complex, 0 to 5 percent slopes	An excessively drained soil associated with dunes and beaches at elevations between 0 and 20 feet; parent material consists of alluvium and/or eolian sands; negligible runoff; sand (0-79 inches); more than 80 inches to restrictive feature.	16.62
1153	Urban land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced	A somewhat excessively drained soil associated with dune fields at elevations between 0 and 190 feet; fine sandy loam, loamy sand, sand; parent material consists of discontinuous human-transported material over eolian sands; low runoff; more than 80 inches to manufactured layer.	1.90
W	Water	Water	38.41

\* Western portions of BSA, within the Pacific Ocean, are not mapped as a soil type by the NRCS. Therefore, the total acres reported in this table do not represent the total size of the BSA due to the lack of available historic soils data.



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## 5.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

The background information presented above combined with habitat assessments performed during the surveys was used to evaluate special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and adjacent habitats. For the purposes of this BRTR, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California Endangered Species Act or FESA
- Are candidate species being considered or proposed for listing under these same acts
- Are recognized as SSC by the CDFW
- Are ranked by CNPS as CRPR 1, 2, 3, or 4 plant species
- Are fully protected by the FGC, Sections 3511, 4700, 5050, or 5515
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions

### 5.1 SPECIAL STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2020) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank; however, only those that are of special concern (S1-S3 rank) are evaluated under CEQA.

One vegetation community identified within the BSA is listed as sensitive: Pickleweed Mats Alliance. This community has a state rank of S3/Vulnerable; vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state. The BSA does not occur within an area covered under a Natural Community Conservation Plan or other protection plan; however, it is within the vicinity of the Ballona Wetlands Ecological Reserve, which is depicted in Appendix D (ESA 2017). No sensitive communities occur within proposed Project area.

### 5.2 DESIGNATED CRITICAL HABITAT

Critical habitat is defined by the USFWS (2020b) as, "...a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery."

There is no designated Critical Habitat designated within or adjacent to the Project site. The nearest designated critical habitat is for western snowy plover (*Charadrius alexandrinus nivosus*), along Dockweiler State Beach approximately 1.1 miles to the south. Based on existing habitat conditions, this species is not expected to nest or forage within the BSA and has a low potential to occur as a transient.



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**5.3 SPECIAL STATUS PLANTS**

Table 6 presents a list of special-status plants, including federally and state listed species and CRPR 1-4 species that are known to occur within 10 miles of the BSA or within the USGS 7.5-minute quadrangles including and surrounding the BSA (Appendix A, Figures 5, 5a, 5b and -5c provide a depiction of known species locations).

Record searches of the CNDDDB, the CNPS Online Inventory, and the Consortium of Critical Herbaria was performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present:** Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal or limited within the BSA, or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low:** A historical record (over 10 years) exists of the taxa within the BSA or general vicinity (approximately 10 miles), and the environmental conditions (including soil type) associated with taxa presence are marginal or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

While many of the species listed below in Table 6 have potential to occur within the BSA, they are not expected to occur within the Project area due to the lack of suitable habitat. Most of the special-status plant species with potential to occur are associated with the BWER and coastal dunes.



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**Table 6: Known and Potential Occurrences of Special Status Plant Taxa within the Biological Study Area**

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Aphanisma blitoides</i> <i>aphanisma</i> <i>aphanisma</i>	<b>1B.2, S2</b>	Coastal bluff scrub, coastal dunes, coastal scrub. On bluffs and slopes near the ocean in sandy or clay soils. Elevation range: 3-305 m.	February-June	<b>Low:</b> Marginally suitable habitat occurs in the uplands of Dockweiler State Beach within the BSA; however, the nearest and most recently recorded occurrence is 9 miles southeast of the BSA.
<i>Arenaria paludicola</i> Marsh sandwort	<b>FE, SE, 1B.1, S1</b>	Marshes and swamps (fresh water or brackish); sandy substrates; found in open habitats. Elevation range: 3-170 m.	March-August	<b>Low:</b> Marginally suitable habitat occurs within the portion of the BSA that includes the Del Rey Lagoon. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from 120 years ago in 1900. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Astragalus brauntonii</i> Braunton's milk-vetch	<b>FE, 1B.1, S2</b>	Chaparral, valley grasslands, coastal sage scrub, closed-cone pine forest. Occurs in disturbed habitat and requires gravelly clay soils. Elevation range: 4-640 m.	January-August	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 6 miles northwest of the BSA; however, this observation is from more than 90 years ago in 1921.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> Ventura Marsh milk-vetch	<b>FE, SE, 1B.1, S1</b>	Coastal dunes, coastal scrub, marshes, and swamps (edges, coastal salt, or brackish). Elevation range: 1-35 m.	(June) August-October	<b>Low:</b> There is marginally suitable habitat occurs in the Del Rey Lagoon within the BSA. The nearest and most recently recorded occurrence is approximately 0.1-mile northwest of the BSA; however, this observation is from more than 30 years ago in 1981. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Astragalus tener</i> var. <i>titi</i> coastal dunes milk-vetch	<b>FE, SE 1B.1, S1</b>	Coastal bluff scrub (sandy), coastal dunes, and coastal prairie (mesic). Often in vernal mesic areas. Elevation range: 1-50 m.	March-May	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 3 miles northwest of the BSA; however, this observation was recorded 90 years ago in 1930.
<i>Atriplex coulteri</i> Coulter's saltbush	<b>1B.2, S1S2</b>	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places. Alkaline or clay soils. Elevation range: 2-460 m.	March-October	<b>Low:</b> There is marginally suitable habitat within the BSA. The nearest recorded occurrence is approximately 3 miles to the northwest of the BSA; however, this observation is from more than 130 years ago in 1881.
<i>Atriplex pacifica</i> south coast saltscale	<b>1B.2, S2</b>	Coastal scrub, coastal bluff scrub, playas, coastal dunes. Alkali soils. Elevation range: 1-400 m.	March-October	<b>Low:</b> There is marginally suitable habitat along the Del Rey Lagoon included in the BSA. The nearest recorded occurrence is approximately 3 miles to the northwest of the BSA; however, this observation is from more than 130 years ago in 1881.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Atriplex parishii</i> Parish's brittle scale	<b>1B.1, S1</b>	Native to Central and Southern California often found in dry lake beds, playas, and ephemeral vernal pools. Saline and alkaline soils. Elevation range: 0-470 m.	June-October	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3 miles northwest of the BSA.
<i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's salt scale	<b>1B.2, S1</b>	Coastal scrub, bluffs, Chenopod scrub, playas, and vernal pools from southern California to Baja California. Elevation range: 0-200 m.	April-October	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles to the northeast of the BSA; however, this observation is from more than 110 years ago.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	<b>4.2, S4</b>	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Granite and rocky substrates. Elevation range: 100-1,700 m.	May-July	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 8 miles north of the BSA from 2008.
<i>Calystegia felix</i> lucky morning-glory	<b>1B.1, S1</b>	Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline, meadows and seeps (sometimes alkaline), riparian scrub (alluvial). Elevation range: 30-215 m.	March-September	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1899o.
<i>Camissoniopsis lewisii</i> Lewis' evening primrose	<b>3, S4</b>	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland on sandy or clay soils. Elevation range: 0-975 feet.	March-May (June)	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 0.3 mile east of the BSA within the BWER (ESA 2017).



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Centromadia parryi</i> <i>ssp. australis</i> southern tarplant	<b>1B.1, S2</b>	Marshes and swamps (margins), valley and foothill grasslands (vernally mesic), and vernal pools; often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass. Elevation range: 0-480 m.	May- November	<b>Low:</b> There is marginally suitable habitat along the Del Rey Lagoon included in the BSA. The nearest and most recently recorded occurrence is approximately 0.2 mile east of the BSA; however, this observation is from more than 20 years ago in 1997.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i> Orcutt's pincushion	<b>1B.1, S1</b>	Coastal bluff scrub (sandy) and coastal dunes; located on sandy soils. Elevation range: 0-100 m.	January- August	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.1 mile to the southeast of the BSA from 2011.
<i>Chenopodium littoreum</i> coastal goosefoot	<b>1B.2, S1</b>	Coastal dunes. Elevation range: 10-30 m.	April-August	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1904.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> salt marsh bird's-beak	<b>FE, SE, 1B.1, S1</b>	Coastal dunes, marshes, and swamps (coastal salt). Elevation range: 0-30 m.	May- October (November)	<b>Low:</b> Marginally suitable habitat occurs in the Del Rey Lagoon within the BSA. The nearest recorded occurrence is approximately one mile northeast of the BSA; however, this observation is from more than 110 years ago in 1901. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	<b>FC, SE, 1B.1, S1</b>	Annual; sandy areas in coastal scrub and native grasslands; Los Angeles and Ventura Counties. Elevation range: 150-1220 m.	April-July	<b>Low:</b> A very small amount of marginally suitable habitat occurs near the Del Rey Lagoon within the eastern portion of the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1901. Suitable habitat would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Dithyrea maritima</i> beach spectaclepod	<b>ST, 1B.1, S1</b>	Coastal dunes, coastal scrub (sandy). Elevation range: 3-50 m.	March-May	<b>Low:</b> Marginally suitable habitat occurs with the portion of the BSA included in the BWER. The nearest recorded occurrence is within the BSA; however, this observation is from over 110 years ago in 1903.
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	<b>FE, SE, 1B.1, S1</b>	Coastal scrub, valley and foothill grassland, and vernal pools. California to Baja. Elevation range: 20-620 m.	April-June	<b>Low:</b> A very small amount of marginally suitable habitat occurs within the eastern portion of the BSA in the BWER. The nearest and most recently recorded occurrence is approximately 4 miles southeast of the BSA; however, this observation is from more than 110 years ago in 1901. Marginally suitable habitat would not be impacted by the project. Therefore, there would be No Effect on this species.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Erysimum suffrutescens</i> Suffrutescent wallflower	<b>4.2, S3</b>	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Located on coastal dunes and bluffs. Elevation range: 0-490 feet.	January- July	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.3 mile east within the BWER (ESA 2017).
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	<b>1A, SH</b>	Marshes and swamps (coastal salt and freshwater). Elevation range: 10-1,525 m.	August- October	<b>Moderate:</b> Suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1891.
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	<b>1B.1, S1</b>	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. Elevation range: 15-1,645 m.	February- July (September)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recent recorded occurrence is approximately 3 miles southeast of the BSA; however, this observation is from more than 80 years ago in 1932.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	<b>1B.1</b>	Marshes and swamps (coastal salt), playas, and vernal pools; Usually found on alkaline soils in playas, sinks, and grasslands. Elevation range: 1-1,375 m.	February- June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from 40 years ago in 1980.
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i> white-veined monardella	<b>1B.3, S3</b>	Chaparral and cismontane woodland. Known only from the Santa Monica, Santa Ynez, and Sierra Madre Mountains. Elevation range: 50-1,525 m.	May-August (April, September- December)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 9 miles northwest of the BSA; however, this observation is from more than 100 years ago in 1907.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Nama stenocarpa</i> mud nama	<b>2B.2, S1S2</b>	Marshes and swamps. Lake shores, riverbanks, intermittently wet areas. Elevation range: 5-500 m.	January- July	<b>Not Likely to Occur:</b> Suitable habitat does not occur within the BSA. The nearest and most recently recorded occurrence is approximately 5 miles northwest of the BSA from more than 110 years ago in 1902.
<i>Nasturtium gambelii</i> Gambel's water cress	<b>FE, ST, 1B.1, S1</b>	Marshes and swamps (freshwater or brackish). Elevation range: 5-330 m.	April- October	<b>Low:</b> A very small amount of marginally suitable habitat occurs along the Del Rey Lagoon included in the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1904. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Navarretia fossalis</i> spreading navarretia	<b>FT, 1B.1, S2</b>	Marshes and swamps (assorted shallow freshwater), playas, vernal pools, and Cheonopod scrub. Elevation range: 30-655 m.	April-June	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 4 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1906.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	<b>1B.2, S2</b>	Coastal scrub, valley and foothill grassland, vernal pools, meadows and seeps. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevation range: 3-1,235 m.	April-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is 4 miles southeast of the BSA; however, this observation is from more than 110 years ago in 1906.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Orcuttia californica</i> California Orcutt grass	<b>FE, SE, 1B.1, S1</b>	Occurs only in large and deep vernal pools. Clay soils with an impervious subsurface layer and longer inundation periods. Elevation range: 15-660 m.	April-August	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 8 miles southeast of the BSA; however, this observation is from more than 40 years ago in 1976.
<i>Phacelia ramosissima</i> var <i>australitoralis</i> South Coast branching phacelia	<b>3.2, S3</b>	Chaparral, coastal dunes, coastal scrub, coastal salt marshes. Located on sandy, sometimes rocky soils. Elevation range: 20-975 feet.	March-August	<b>High:</b> Suitable habitat occurs within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded occurrence is 0.3 mile east of the BSA within the BWER (ESA 2017).
<i>Phacelia stellaris</i> Brand's star phacelia	<b>1B.1, S1</b>	Coastal dunes and coastal scrub. Elevation range: 1-400 m.	March-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1909.
<i>Potentilla multijuga</i> Ballona cinquefoil	<b>1A, SX</b>	Meadows and seeps (brackish), Elevation range: 0-2 m.	June-August	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from 130 years ago in 1890.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	<b>2B.2, S2</b>	Chaparral, cismontane woodland, coastal scrub, and riparian woodland. 0-2100 m.	(July) August- November (December)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 10 miles; however, this observation is from more than 110 years ago in 1907.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Quercus dumosa</i> Nuttall's scrub oak	<b>1B.1, S3</b>	Closed-cone coniferous forest, chaparral, coastal scrub. Generally, on sandy soils near the coast; sometimes on clay loam. Elevation range: 15-640 m.	February-May (May-August)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 4 miles northeast of the BSA from 2009.
<i>Sidalcea neomexicana</i> salt spring checkerbloom	<b>2B.2, S2</b>	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub; alkali springs and marshes. Elevation range: 3-2,380 m.	March-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is 3 miles northeast of the BSA; however, this observation is from over 90 years ago in 1922.
<i>Suaeda taxifolia</i> woolly seablite	<b>4.2, S4</b>	Coastal bluff scrub, coastal dunes, margins of coastal salt marshes. Elevation range: 0-165 feet.	January-December	<b>High:</b> Suitable habitat occurs within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded occurrence is 0.3 mile east of the BSA in the BWER (ESA 2016).
<i>Symphotrichum defoliatum</i> San Bernardino aster	<b>1B.2, S2</b>	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernal mesic grassland or near ditches, streams and springs; disturbed areas. Elevation range: 3-2,045 m.	July-November	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is 6 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1904.
<i>Symphotrichum greatae</i> Greata's aster	<b>1B.3, S2</b>	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. 300-2010 m.	Jun-Oct	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest recorded occurrence is approximately 8 miles north of the BSA.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Thelypteris puberula</i> var. <i>sonorensis</i> Sonoran maiden fern	<b>2B.2, S2</b>	Meadows and seeps (seeps and streams) and riparian habitats. 50-610 m.	Jan-Sept	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 7 miles northwest of the BSA from 2010.

**Status Codes***Federal Designation*

FE = Federally Endangered

FC = Federal Candidate Species for Listing

*CDFW State Designation*

SE = State Endangered

ST = State Threatened

*State Ranking*

S1 = Critically Imperiled

S2 = Imperiled

S3 = Vulnerable

S4 = Apparently Secure

S5 = Secure

SH = Possibly Extirpated

SX = Presumed Extirpated

*CNPS CRPR Designation*1A = Plants considered by the CNPS to be extinct in California  
1B = Plants rare, threatened, or endangered in California and elsewhere.

2A. Presumed extinct in California, extant and more common elsewhere

2B. Rare or Endangered in California, more common elsewhere

3. Plants for which we need more information - Review list

4. Plants of limited distribution - Watch list

.1 = Seriously threatened in California (high degree/immediacy of threat).

.2 = Fairly threatened in California (moderate degree/immediacy of threat).

BSA = Biological Study Area

BWER = Ballona Wetlands Ecological Reserve

m = meter

## 5.4 SPECIAL STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the FESA or California Endangered Species Act, taxa proposed for such listing, SSC, and other taxa that have been identified by USFWS, CDFW, or local jurisdictions as unique or rare and that have the potential to occur within the BSA. The only special-status wildlife species observed in the BSA during the survey was the California brown pelican. They were observed within Ballona Creek and soaring over the BSA.

The CNDDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles, as discussed in Section 2.0. Table 7 summarizes the special-status wildlife taxa known to occur regionally and their potential for occurrence in the BSA (Appendix A, Figures 5, 5a, 5b and 5c provide a depiction of previously reported species locations). Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.



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- **High:** Habitat (including soils) for the taxa occurs onsite, and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs onsite, and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs onsite; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs within the BSA and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

While many of the species listed in Table 7 have potential to occur within the BSA, they are not expected to occur within the Project area due to the lack of suitable habitat. Although some of the more mobile species may occasionally occur as a transient visitor, they would not occupy Project area for any significant amount of time as the Project area is comprised of a moderately urbanized, developed area consisting of concrete and rip rap jetties along the mouth of Ballona Creek with high pedestrian, cyclist, and boat traffic nearby.



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**Table 7: Known and Potential Occurrences of Special-Status Wildlife Taxa within the Biological Study Area**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>INVERTEBRATES</b>					
<i>Bombus crotchii</i>	Crotch bumble bee	<b>SC, S1S2</b>	Coastal California east to the sierra-cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile east of the BSA; however, this observation is from approximately 30 years ago in 1981.	<b>Moderate</b>
<i>Brennania belkini</i>	Belkin's dune tabanid fly	<b>S1S2</b>	Occurs in exposed sandy substrates within southern foredune and southern dune scrub plant communities. Adults fly from May to July and breed only on coastal sand dunes.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 0.1 mile northeast of the BSA; however, this observation is from 40 years ago in 1980.	<b>Low</b>
<i>Carolella busckana</i>	Busck's gallmoth	<b>SH</b>	Coastal scrub dune habitat.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 1 mile southeast of the BSA; however, this observation is from over 80 years ago in 1939.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	<b>S2</b>	Extirpated from most sites but documented extant populations from north of San Francisco to Mexico. Occurs in areas adjacent to non-brackish water in clean, dry, light-colored sand in the upper zones and coastal sand dunes. Burrows are located in moist soils that are far enough away from water bodies to avoid being inundated with water.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 110 years ago in 1907.	<b>Not Likely to Occur</b>
<i>Cicindela senilis frosti</i>	senile tiger beetle	<b>S1</b>	Herbaceous wetlands, playa, coastal and alkali mud flats, salt marsh, and marine shorelines. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone. Extinct over much of its former range in coastal Southern California. The only known healthy population is within an inland salt marsh in Lake Elsinore. Adults overwinter, but larvae always present.	Suitable habitat occurs within the BSA; however, it should be noted that the nearest and most recently recorded CNDDDB occurrence is 5 miles southeast of the BSA; however, this observation is from more than 40 years ago in 1979.	<b>Moderate</b>
<i>Coelus globosus</i>	globose dune beetle	<b>S1S2</b>	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is within the BSA; however, this observation is from over 40 years ago in 1979.	<b>Moderate</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Danaus plexippus</i> (pop. 1)	monarch butterfly – California overwintering population	<b>S2S3</b>	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation. Roosts located in wind-protected tree groves (eucalyptus, pine, cypress), with nectar and water sources nearby.	Marginally suitable foraging habitat occurs within the BSA and is known to occur within the BWER located 0.3 mile east of the BSA. The nearest recorded CNDDDB occurrence is 0.6 mile east of the BSA from 2014.	<b>Moderate</b>
<i>Eucosma hennei</i>	Henne's eucosman moth	<b>S1</b>	Endemic to the Los Angeles/El Segundo Dunes in Los Angeles County. Open sand, undisturbed sand dunes and dense shrubs populated with the larval host plant <i>Phacelia ramosissima</i> var. <i>austrolitoralis</i> .	The species' larval host plant was not observed with the BSA, and suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 1 mile southeast; however, this observation is from more than 30 years ago in 1984.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Euphilotes battoides allyni</i>	El Segundo blue butterfly	<b>FE, S1</b>	Historically ranged over the entire Los Angeles and El Segundo Dunes and the northwestern Palos Verdes Peninsula in southwestern Los Angeles County. Currently distributed on three remnant habitats within its former range supporting coastal sand dunes with coast buckwheat ( <i>Eriogonum parvifolium</i> ). All life stages depend on coast buckwheat and possibly loose sand.	The species' host plant was not observed within the BSA, but occurrences have been mapped within the portions of the BWER less than 1 mile southeast of the BSA (MBC et al. 2016). The species is known to occupy the southwestern portion of the BWER and was observed in 2013. The El Segundo Butterfly Recovery Unit covers the portions of Ballona west of State Route 1 to the ocean, which includes the BSA (MBC et al. 2016). The nearest recorded CNDDDB occurrence is approximately 1.5 miles to the southeast of the BSA in 2005. May Affect, Not Likely to Adversely Affect.	<b>Low</b>
<i>Glaucopsyche lygdamus palosverdesensis</i>	Palos Verdes blue butterfly	<b>FE, S1</b>	Dependent on two known larval hostplants, Santa Barbara milkvetch ( <i>Astragalus trichopodus</i> var. <i>lonchus</i> )—also known as locoweed—and common deerweed ( <i>Lotus scoparius</i> ) within coastal scrub habitat. Known only from the Palos Verdes peninsula.	One of the species of the two known larval host plants (common deerweed) was observed along the margins of the Del Rey Lagoon within the BSA; however, the nearest and most recently recorded CNDDDB occurrence is 6 miles south of the BSA from 2001. May Affect, Not Likely to Adversely Affect.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Onychobaris langei</i>	Lange's El Segundo Dune weevil	<b>S1</b>	Occurs in southern foredune and southern dune scrub plant communities. Possible food plant is an evening primrose ( <i>Oenothera</i> sp.).	Marginally suitable foraging habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 1 mile southeast of the BSA; however, this observation is from more than 80 years ago in 1938.	<b>Low</b>
<i>Panoquina errans</i>	wandering (saltmarsh) skipper	<b>S2</b>	Occurs in localized colonies along the coast of Southern California to Baja California. It is associated with its larval host plants, salt grass, which primarily occurs in sandy habitats along beaches, bluffs, and estuaries.	Marginally suitable habitat occurs within the BSA, but the species larval host plant was not observed. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile southeast from 2010.	<b>Low</b>
<i>Socalchemmis gertschi</i>	Gertsch's socialchemmis spider	<b>S1</b>	Known from Brentwood and Topanga. Habitat consists of sage scrub, chaparral, oak woodland, coniferous forest, generally in rocky outcrops or talus slopes in non-arid climates	No suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 5 miles northwest of the BSA; however, this observation is from more than 60 years ago in 1952.	<b>Not Likely to Occur</b>
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	<b>FE, S1S2</b>	Endemic to western Riverside, Orange, and San Diego Counties in areas of tectonic swales and earth slump basins in grassland and coastal sage scrub. Inhabits seasonally astatic pools filled by winter and spring rains. Hatches in warm water later in the season.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 1 mile southeast of the BSA from 2005.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Trigonoscuta dorothea dorothea</i>	Dorothy's El Segundo Dune weevil	<b>S1</b>	Distributed habitats only along coastal southern California from Point Dume to Point Fermin and is associated with southern dune scrub plant community.	Marginally suitable habitat occurs within the BSA, and the nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from over 60 years ago in 1954.	<b>Moderate</b>
<i>Tryonia imitator</i>	mimic tryonia (California brackishwater snail)	<b>S2</b>	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	Suitable habitat occurs along the Del Rey Lagoon included within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded CNDDDB occurrence is within the BSA from about 2001.	<b>High</b>
<b>FISH</b>					
<i>Oncorhynchus mykiss irideus</i> (pop. 10)	steelhead - southern California DPS	<b>FE, S1</b>	Inhabits seasonally accessible rivers and streams with gravel for spawning. Requires sufficient flows in their natal streams to be able to return from oceans and lakes to spawn. Federal listing refers to populations from Santa Maria River south to the southern extent of the range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	No suitable spawning habitat occurs within the BSA. The nearest recorded occurrence is approximately 4 miles upstream of Ballona Creek from 2008. May act as a transient passing through the BSA.	<b>Low (transient, no spawning)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>AMPHIBIANS</b>					
<i>Emys marmorata</i>	western pond turtle	<b>SSC, S3</b>	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.2-mile northeast of the BSA; however, this observation is from more than 30 years ago in 1987.	<b>Not Likely to Occur</b>
<i>Spea hammondi</i>	western spadefoot	<b>SSC, S3</b>	Occurs in the Central Valley and adjacent foothills and the non-desert areas of Southern California and Baja California. Grassland habitats and valley-foothill hardwood woodlands. Vernal pools and other temporary rain pools, cattle tanks, and occasionally pools of intermittent streams are essential for breeding and egg-laying. Burrows in loose soils during dry season.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 3 miles north of the BSA from more than 80 years ago in 1941.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>REPTILES</b>					
<i>Anniella stebbinsi</i>	Southern California legless lizard	<b>SSC, S3</b>	Generally south of the transverse range, extending to northwestern Baja California; occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Piute mountains in Kern County; variety of habitats; generally in moist, loose soil; they prefer soils with a high moisture content.	Suitable habitat is present within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded CNDDDB occurrence is 0.1 mile northeast of the BSA from 2016.	<b>High</b>
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	<b>SSC, S3</b>	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Limited suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 7 miles northwest of the BSA from 2007.	<b>Moderate</b>
<i>Phrynosoma blainvillii</i>	coast horned lizard	<b>SSC, S3S4</b>	Primarily in sandy soil in open areas, especially sandy washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 2,400 meters (8,000 feet) elevation.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 7 miles northeast of the BSA; however, this observation is from over 60 years ago in 1953.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Thamnophis hammondi</i>	two-striped gartersnake	<b>SSC, S3S4</b>	Coast California from vicinity of Salinas to northwest Baja California. From sea level to about 7,000 feet elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 4 miles northwest of the BSA from 2010.	<b>Not Likely to Occur</b>
<b>BIRDS</b>					
<i>Agelaius tricolor</i>	tricolored blackbird	<b>ST, SSC, BCC, S1S2</b>	Highly colonial species, most numerous in the Central Valley and vicinity, and largely endemic to California. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Forages in grassland and cropland habitats with insect prey within a few kilometers of the colony. They are itinerant breeders, nesting more than once at different locations during the breeding season.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 7 miles southeast of the BSA; however, this observation is from about 80 years ago.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Athene cunicularia</i>	burrowing owl	<b>SSC, BCC, S3</b>	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Owls are found in microhabitats highly altered by humans, including flood risk management and irrigation basins, dikes, banks, abandoned fields surrounded by agriculture, and road cuts and margins. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 0.1 mile southeast of the BSA from 2010.	<b>Low</b>
<i>Buteo swainsoni</i>	Swainson's hawk	<b>ST, BCC, S3</b>	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 3 miles northwest of the BSA; however, this observation is from more than 120 years ago in 1896.	<b>Not Likely to Occur (nesting)/Low (transient)</b>
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	<b>FT, SSC, BCC, S2S3</b>	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	No suitable nesting habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 100 years ago in 1914.	<b>Not Likely to Occur (nesting)/ Low (transient)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Coturnicops noveboracensis</i>	yellow rail	<b>SSC, BCC, S1S2</b>	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence was 4 miles southeast of the BSA; however, this observation is from more than 20 years ago in 1998.	<b>Not Likely to Occur</b>
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	<b>FE, SE, S1</b>	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S.	Although suitable nesting habitat is not present within the BSA, foraging habitat is present within the BWER, which is located 0.1 mile east of the BSA. The species may pass through the site in a transient capacity during migration. The nearest recorded CNDDDB occurrence is 7 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1894. May Affect, Not Likely to Adversely Affect.	<b>Not Likely to Occur (nesting)/ Low (transient)</b>
<i>Laterallus jamaicensis coturniculus</i>	California black rail	<b>ST, FP, BCC, S1</b>	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 90 years ago in 1928.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	<b>SE, S3</b>	Locally common non-migratory resident of coastal saltmarsh. An obligate breeder in middle elevation saltmarsh, nearly always characterized by pickleweed ( <i>Salicornia</i> spp.), either in tidal situations or non-tidal alkaline flats nearby. Foraging primarily stems from saltmarsh and mudflat, individuals, particularly post-breeding birds, can be found foraging in a wide variety of habitats including upper marsh, adjacent ruderal and ornamental vegetation, open beach and mudflat, and even dirt and gravel parking lots.	Suitable nesting and foraging habitat occur within the BSA and in the BWER, which is located 0.1 mile east of the BSA. The BWER is known to support nesting and foraging Belding's savannah sparrows; however, the species was not observed within the BSA during biological surveys. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile northeast of the BSA from 2001.	<b>High</b>
<i>Pelecanus occidentalis californicus</i>	California brown pelican	<b>FD, SD, FP, S3</b>	Typically found on rocky, sandy, or vegetated offshore islands; beaches; open sea (for feeding); harbors; marinas; estuaries; and breakwaters. Typically build nests on the ground or on native shrubs.	Although no suitable nesting habitat occurs within the BSA, foraging habitat persists within the creek, as well as the BWER, which is located 0.1 mile east of the BSA. The species was observed within the creek and flying over the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 0.2 mile southwest of the BSA from 2000.	<b>Present</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Poliioptila californica californica</i>	coastal California gnatcatcher	<b>FT, SSC, S2</b>	Obligate, permanent resident of coastal sage scrub below 2500 feet in Southern California. Low, coastal sage scrub in arid washes and on mesas and slopes with California sagebrush ( <i>Artemisia californica</i> ) as a dominant or co-dominant species. Not all areas classified as coastal sage scrub are occupied.	No suitable nesting habitat occurs within the BSA; however, the species was observed foraging within the BWER in 2011, well outside of the BSA (ESA 2017). The nearest recorded CNDDDB occurrence is approximately 2 miles northeast of the BSA; however, this observation is from 40 years ago in 1980. Species may be observed foraging in or migrating through the project area. May Affect, Not Likely to Adversely Affect.	<b>Moderate</b>
<i>Riparia riparia</i>	bank swallow	<b>ST, S2</b>	Low areas along rivers, streams, ocean coasts, and reservoirs. Nesting habitat is vertical banks of fine textured soils, most commonly along streams and rivers. Forage in open areas and avoid places with tree cover.	Although no suitable nesting habitat occurs within the BSA, the species may use the BWER, which is located 0.1 mile east of the BSA, as foraging habitat. The nearest and most recently recorded CNDDDB occurrence is approximately 5 miles northwest of the BSA; however, this observation is from more than 110 years ago in 1907.	<b>Not Likely to Occur (nesting)/Low (transient)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sternula antillarum browni</i>	California least tern	<b>FE, SE, FP, S2</b>	Nests on sandy upper ocean beaches and open barren sites, and occasionally uses mudflats. Forages on adjacent surf line, estuaries, or the open ocean. Colonies are located near the ocean shoreline (within 0.5 mile [about 800 meters]), typically on nearly flat, loose sandy substrates with lightly scattered short vegetation and debris, although some colonies have been located on hard-packed surfaces, even unused asphalt. Colony sites must provide access to the shoreline for juveniles and must be relatively free of predators, or the colony may abandon breeding efforts before completion.	Although no nesting habitat occurs within the BSA, there are known nesting sites 0.2 miles north of the BSA in Venice Beach and within the eastern portion of the BWER, approximately one mile east of the BSA (ESA 2017). The species is known to forage in Ballona Creek, Marina del Rey Harbor, and the BWER. The nearest recorded CNDDDB occurrence is approximately 0.2 mile northeast of the BSA; however, this observation is from more than 30 years ago in 1987. May Affect, not Likely to Adversely Affect.	<b>Not Likely to Occur (nesting)/High (foraging/transient)</b>
<i>Vireo bellii pusillus</i>	least Bell's vireo	<b>FE, SE, S2</b>	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Often inhabits structurally diverse woodlands along watercourses including cottonwood-willow and oak woodlands and mulefat scrub. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	The species is known to nest and forage in the BWER and has been recorded in the Playa Vista riparian corridor near the BSA in 2010; however, no individuals were observed within the BSA at that time (ESA 2017). The nearest and most recently recorded CNDDDB occurrence is 1 mile southeast of the BSA from 2010. Suitable nesting habitat occurs approximately 0.4 mile northeast of the BSA. May Affect, not Likely to Adversely Affect.	<b>High</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>MAMMALS</b>					
<i>Antrozous pallidus</i>	pallid bat	<b>SSC, S3</b>	Desert, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 3 miles northeast of the BSA; however, this observation is from more than 80 years ago in 1932.	<b>Not Likely to Occur</b>
<i>Eumops perotis californicus</i>	western mastiff bat	<b>SSC, S3S4</b>	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, bridges, trees, and tunnels. In California, most records are from rocky areas at low elevations.	No suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is approximately 3 miles northeast of the BSA; however, this observation is from more than 90 years ago in 1925.	<b>Not Likely to Occur</b>
<i>Lasionycteris noctivagans</i>	silver-haired bat	<b>S3S4</b>	Coastal and montane forest. Forages over streams, ponds, and brushy areas, and requires follows of trees for roost habitat. Conifer and mixed conifer/hardwood forests. Roosts mainly in hollows or crevices of trees, but may also roost in rock crevices, mines, or caves. Forages over streams, ponds, and brushy areas.	No suitable habitat occurs within the BSA, but species may appear as a migratory transient. The nearest and most recently recorded CNDDDB occurrence is 4 miles northwest of the BSA; however, this observation is from over 30 years ago in 1985.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Lasiurus cinereus</i>	hoary bat	<b>S4</b>	Forages over a wide range of habitats, but prefers open habitats with access to water and trees for roosting. Typically solitary, roosting in the foliage of shrubs or coniferous and deciduous trees. Roosts are usually near the edge of a clearing.	No suitable habitat occurs within the BSA, but species may appear as a migratory transient. The nearest recorded CNDDDB occurrence is 3 miles northeast of the BSA; however, this observation is from more than 80 years ago in 1939.	<b>Low</b>
<i>Microtus californicus stephensi</i>	south coast marsh vole	<b>SSC, S1S2</b>	Occurs in the area of tidal marshes in Los Angeles, Orange, and southern Ventura Counties.	Suitable habitat occurs with the BSA and was captured within the BWER in 2010 and 2011. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile east of the BSA from 2011.	<b>High</b>
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	<b>SSC, S3</b>	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 4 miles southeast of the BSA; however, this observation is from over 20 years ago in 1994.	<b>Not Likely to Occur</b>
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	<b>FE, SSC, S1</b>	An obligate resident of fine-grained sandy soils of coastal strand, coastal dunes, river and marine alluvium, and coastal sage scrub in close proximity to the ocean and has never been collected more than 2 miles from the coast. Occurrences are closely associated with loose or friable soils that permit burrowing.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 80 years ago in 1938.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sorex ornatus salicornicus</i>	southern California saltmarsh shrew	<b>SSC, S1</b>	Coastal marshes in Los Angeles, Orange and Ventura Counties. Requires dense vegetation and woody debris for cover.	Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile southeast of the BSA from 2009.	<b>Moderate</b>
<i>Taxidea taxus</i>	American badger	<b>SSC, S3</b>	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open and uncultivated ground. Preys on burrowing rodents. Digs burrows.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is 7 miles northeast of the BSA.	<b>Not Likely to Occur</b>

**State Rankings:**

S1 = Critically Imperiled  
 S2 = Imperiled  
 S3 = Vulnerable  
 S4 = Apparently Secure  
 S5 = Secure  
 SH = Possibly Extirpated  
 SX = Presumed Extirpated  
 SC = State Candidate for Listing  
 SD = State Delisted  
 SA = CDFW Special Animal  
 SE = State Endangered  
 ST = State Threatened  
 FP= Fully Protected  
 SSC = Species of Special Concern

**Federal Rankings:**

FE = Federally Endangered  
 FD = Federally Delisted  
 BCC = USFWS Bird of Conservation Concern

BSA=Biological Study Area  
 BWER = Ballona Wetlands Ecological Reserve  
 CNDDDB =California Natural Diversity Database



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## 5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian “movement corridor” (Bulger et al. 2002; Hunt 1993; Ramirez 2002, 2003a, 2003b; Rathbun et al. 1992; Trenham 2002). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Beier 1993, 1995; Newmark 1995; Noss et al. 1996, n.d.). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that link two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors, within larger natural habitat areas that are frequently used by animals to facilitate movement and provide access to water, food, cover, den sites, and other necessary resources. A travel route is generally preferred by a species because it provides the least amount of



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topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll 1997).

- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are human-made and include culverts, underpasses, drainage pipes, bridges, tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll 1997).

### 5.5.1 Wildlife Movement in the BSA

The BSA is located in a heavily developed area within the communities of Playa del Rey and Marina del Rey; but it has localized portions of open space and open water, particularly the Del Rey Lagoon, Dockweiler State Beach, Ballona Creek, and Marina del Rey Main Channel. The BSA is amid conditions that would be expected to significantly constrain the movement of wildlife within the region and, by extension, through the site. The area surrounding the BSA is characterized by residential and commercial development and infrastructure, including significant barriers to terrestrial wildlife movement such as buildings, fencing, jetties, and busy multi-lane roadways. These areas may harbor common species habituated to life in urban environments such as Virginia opossum, raccoon, Audubon’s cottontail, California ground squirrel, and other small rodents. The localized portions of open area likely provide “live-in habitat,” foraging habitat, or habitat for transient and migratory species.

The southwestern fenced boundary of the Ballona Wetlands Ecological Reserve is 0.1 mile east of the BSA. It is a regionally important stopover site for both resident and migratory birds, and is within the Pacific Flyway, a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia. Each year, at least one billion birds migrate along the Pacific Flyway (Audubon 2020). Ballona Creek and tidal channels provide movement for marine fish species and marine mammals (*Phocidae* sp. and *Otariidae* sp.) through Ballona Creek and the Marina del Rey Main Channel.

Within the BSA, the level of surrounding urban development, presence of physical barriers, and lack of native habitat outside of the adjacent BWER, would significantly constrain the passage of most large terrestrial wildlife known to occur in the region. Terrestrial wildlife corridors between the BSA and other areas of open space are extremely constrained by Ballona Creek, roadways, and commercial and residential development. The BSA does not occur within any known wildlife movement corridor or habitat linkage as identified by the Los Angeles County Department of Regional Planning (2014), South Coast Wildlands (2008), or Penrod et al (2001).



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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Resources Technical Report

6.0 References

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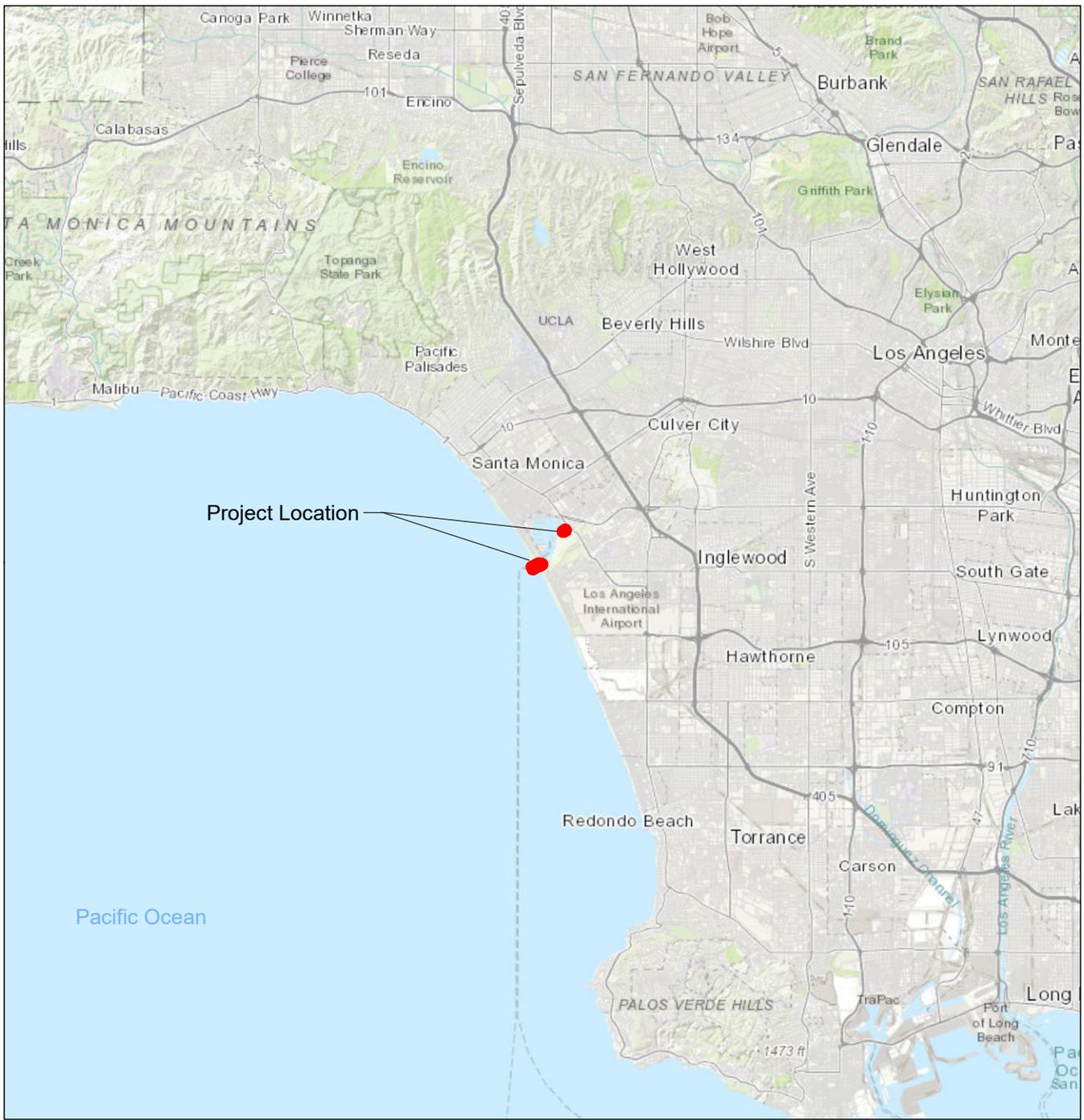
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## Appendix A FIGURES

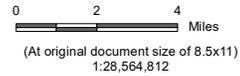




Project Location



 Project Location



Project Location Prepared by DL on 2020-09-24  
 Ballona Creek TR by ST on 2020-09-24  
 Los Angeles County, California IR by JV on 2020-09-24

Client/Project 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

Figure No.

1

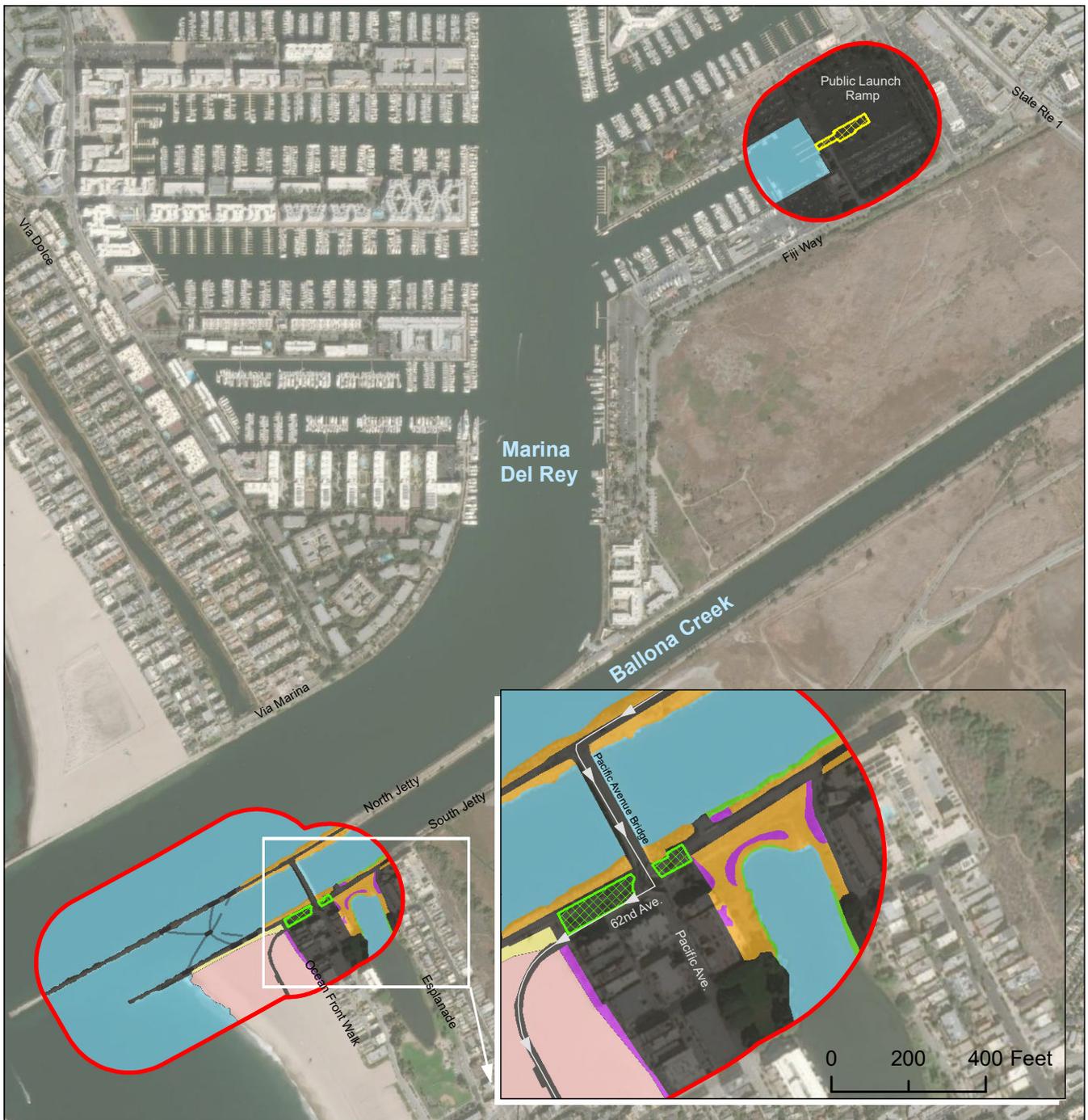
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**Project Location Map**

- Notes**
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  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
  4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.

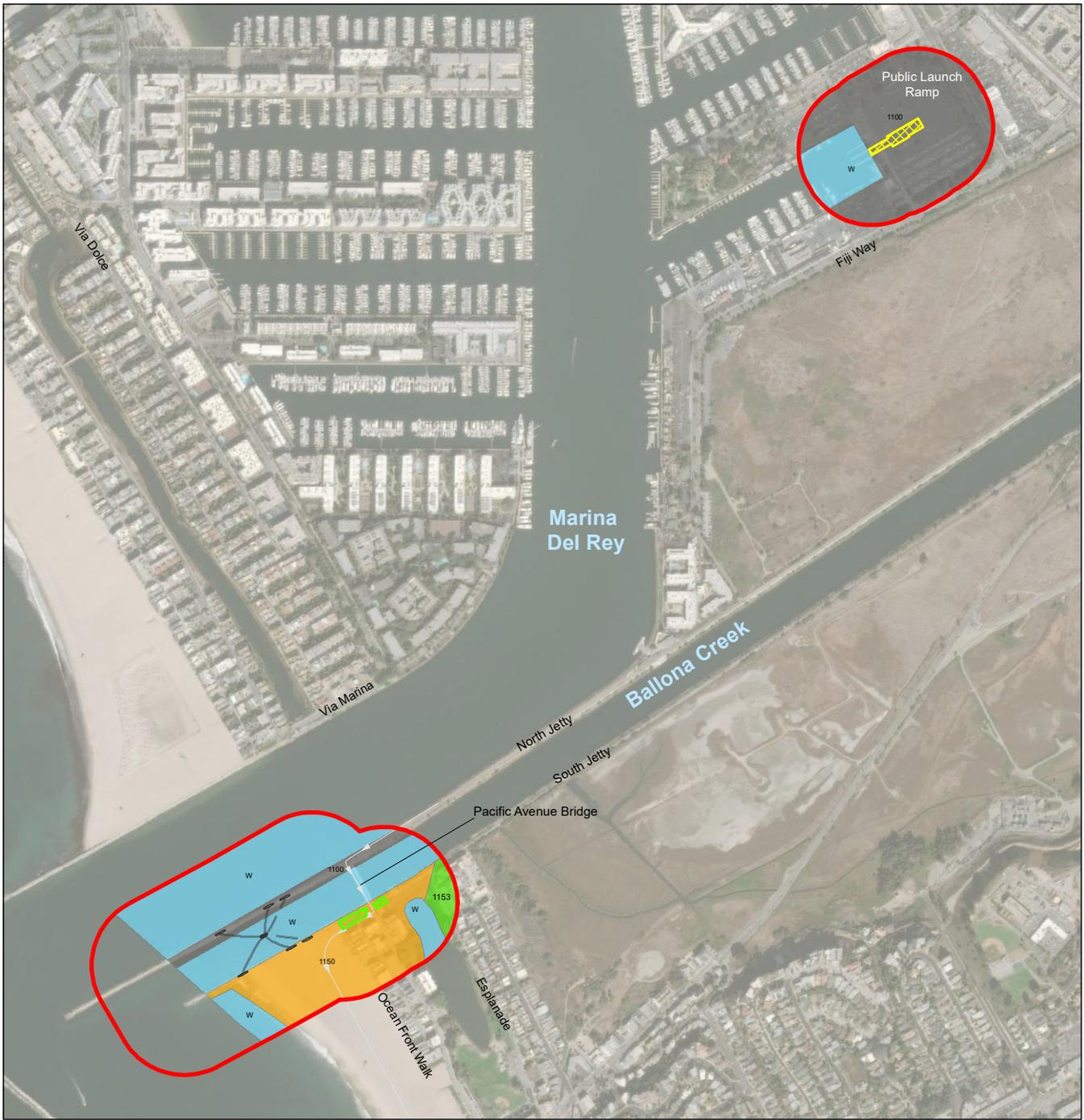
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V:\184031268\05\_report\_delivd\wgs\_design\gis\_figures\MXD\BTRFigure2\_BRTR\_VecMap\_02242020.mxd Revisd: 2020-10-19 Bv.dalaw



<p><b>Biological Survey Area</b></p> <p>Existing Bikeways</p> <p><b>Project Footprint</b></p> <ul style="list-style-type: none"> <li>Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]</li> <li>Mooring Footprint [0.113 Acres]</li> <li>Trash Boom</li> <li>Mooring Line</li> <li>Mooring Construction Staging Areas [0.37 Acres]</li> <li>Interceptor Assembly Area [0.63]</li> </ul> <p><b>Notes</b></p> <ol style="list-style-type: none"> <li>1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet</li> <li>2. Interceptor Centroid Coordinates: 33.962071, -118.455715</li> <li>3. Data Sources: Stantec 2020.</li> <li>4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</li> <li>5. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.</li> </ol>	<p><b>Vegetation Communities &amp; Land Cover Types</b></p> <ul style="list-style-type: none"> <li>Developed (34.88 Acres)</li> <li>Dune Mat Alliance (0.41 Acres)</li> <li>Ice Plant Mat Alliance (0.46 Acres)</li> <li>Invasive Monoculture (2.76 Acres)</li> <li>Open Water (55.96 Acres)</li> <li>Pickleweed Mats Alliance (0.24 Acres)</li> <li>Sandy Beach (7.30 Acres)</li> </ul>	<p>0 550 1,100 Feet</p> <p>(At original document size of 8.5x11) 1:13,200</p> <p><b>Stantec</b></p> <p><small>Project Location</small> Prepared by DL on 2020-09-24  <small>Ballona Creek</small> TR by ST on 2020-09-24  <small>Los Angeles County, California</small> IR by JV on 2020-09-24</p> <p><small>Client/Project</small> 184031268          Los Angeles County Public Works          Ballona Creek Trash Interceptor Pilot Project          Biological Resources Technical Report</p> <p><small>Figure No.</small>  <b>2</b></p> <p><small>Title</small>  <b>Vegetation Communities &amp; Land Cover Types</b></p>
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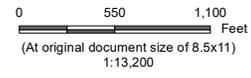
Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



- Biological Survey Area
- Existing Bikeways
- Project Footprint**
- Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
- Mooring Footprint [0.113 Acres]
- Trash Boom
- Mooring Line
- Interceptor Assembly Area [0.62 Acres]
- Mooring Construction Staging Areas [0.37 Acres]

- Soils Map Unit Symbol**
- 1100; Urban land, 0 to 2 percent slopes, dredged fill substratum
  - 1150; Abaft-Beaches complex, 0 to 5 percent slopes
  - 1153; Urban land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced
  - W; Water

- Notes**
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020, NRCS 2020.
  3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
  4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft



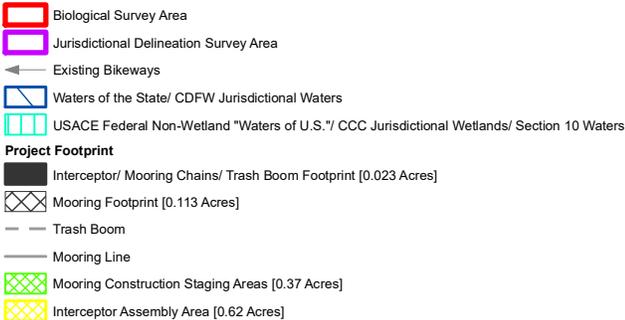
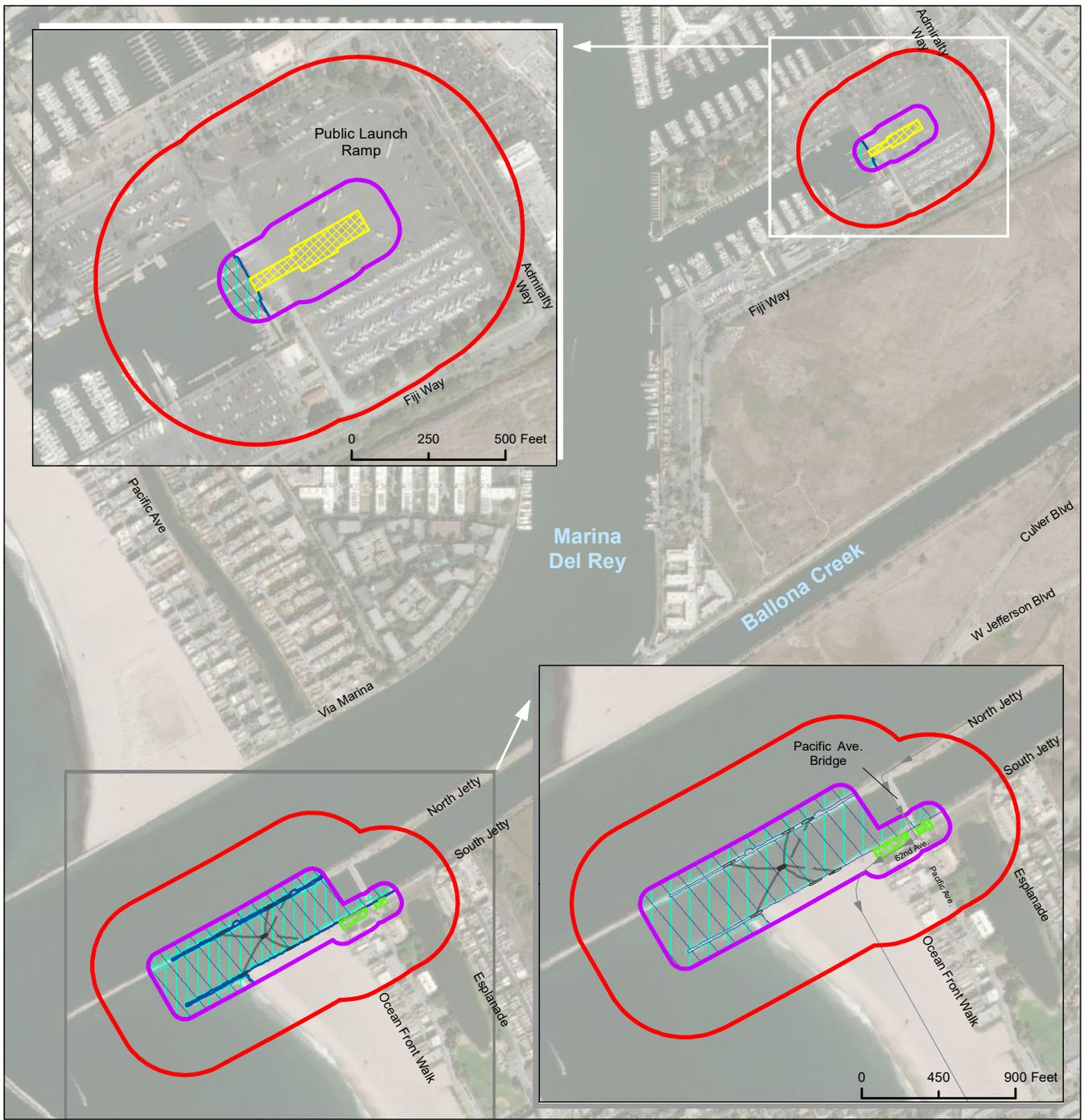
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*Prepared by* DL on 2020-09-25, TR by JV on 2020-09-25, IR by ST on 2020-09-25

*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

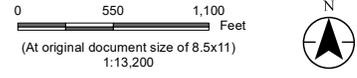
*Figure No.*  
**3**

*Title*  
**Historical Soils**

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**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.



**Stantec**

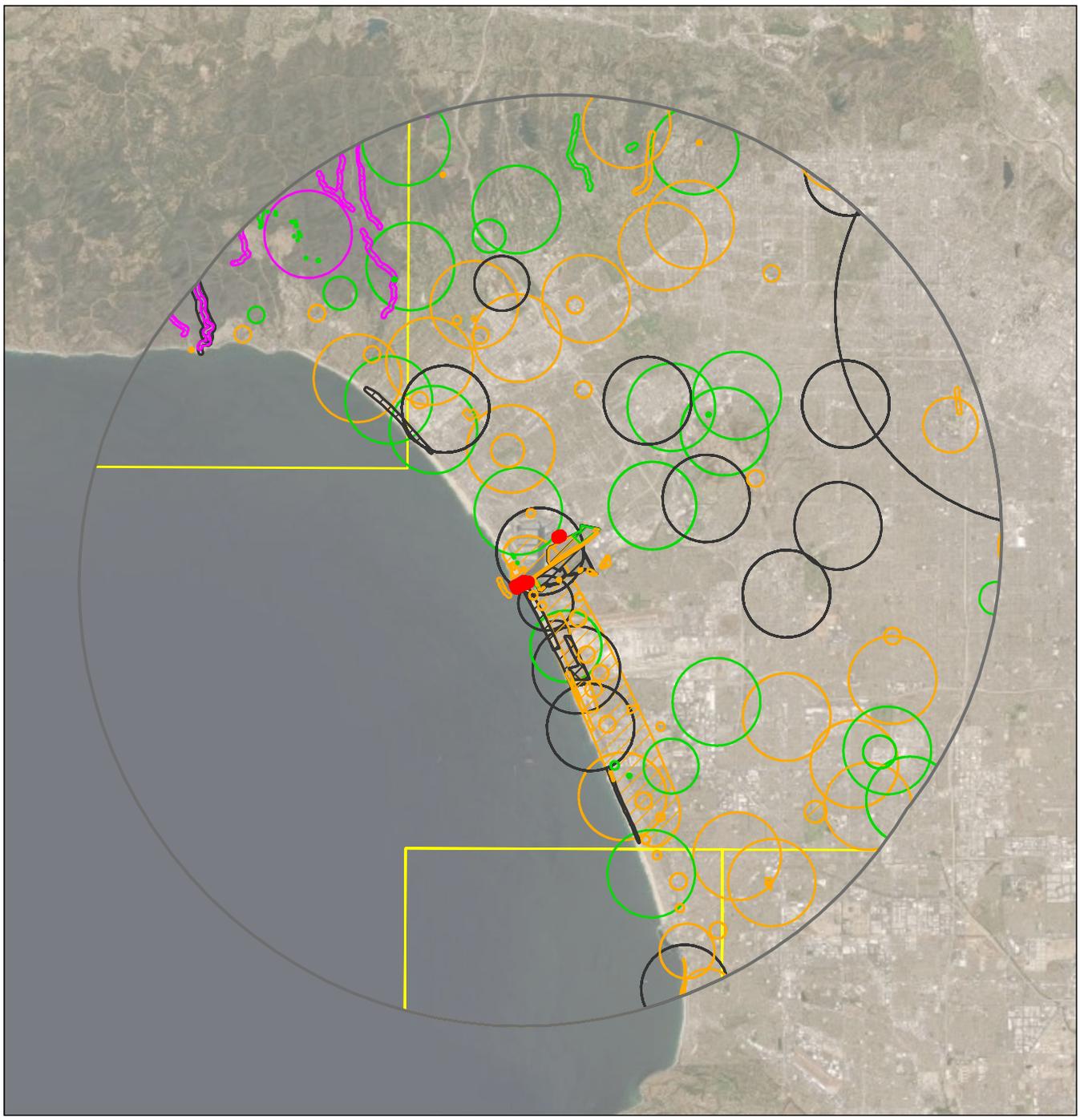
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*Client/Project* Los Angeles County Public Works Ballona Creek Trash Interceptor Pilot Project Biological Resources Technical Report  
 184031268

*Figure No.*  
**4**  
*Title*  
**Jurisdictional Delineation Map**

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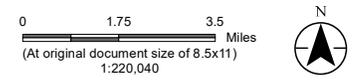
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<span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> Biological Survey Area	<span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed orange;"></span> Animal (non-specific)
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black;"></span> 10 Search Radius	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid orange;"></span> Animal (circular)
<b>Symbology</b>	<span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed magenta;"></span> Terrestrial Comm. (specific)
<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> Plant (80m)	<span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed magenta;"></span> Terrestrial Comm. (circular)
<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px dashed black;"></span> Plant (specific)	<span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed black;"></span> Multiple (specific)
<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> Plant (non-specific)	<span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed black;"></span> Multiple (non-specific)
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid green;"></span> Plant (circular)	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black;"></span> Multiple (circular)
<span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px solid black;"></span> Animal (80m)	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid yellow;"></span> Sensitive EO's (Commercial only)
<span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px dashed black;"></span> Animal (specific)	

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020, CNDDDB 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



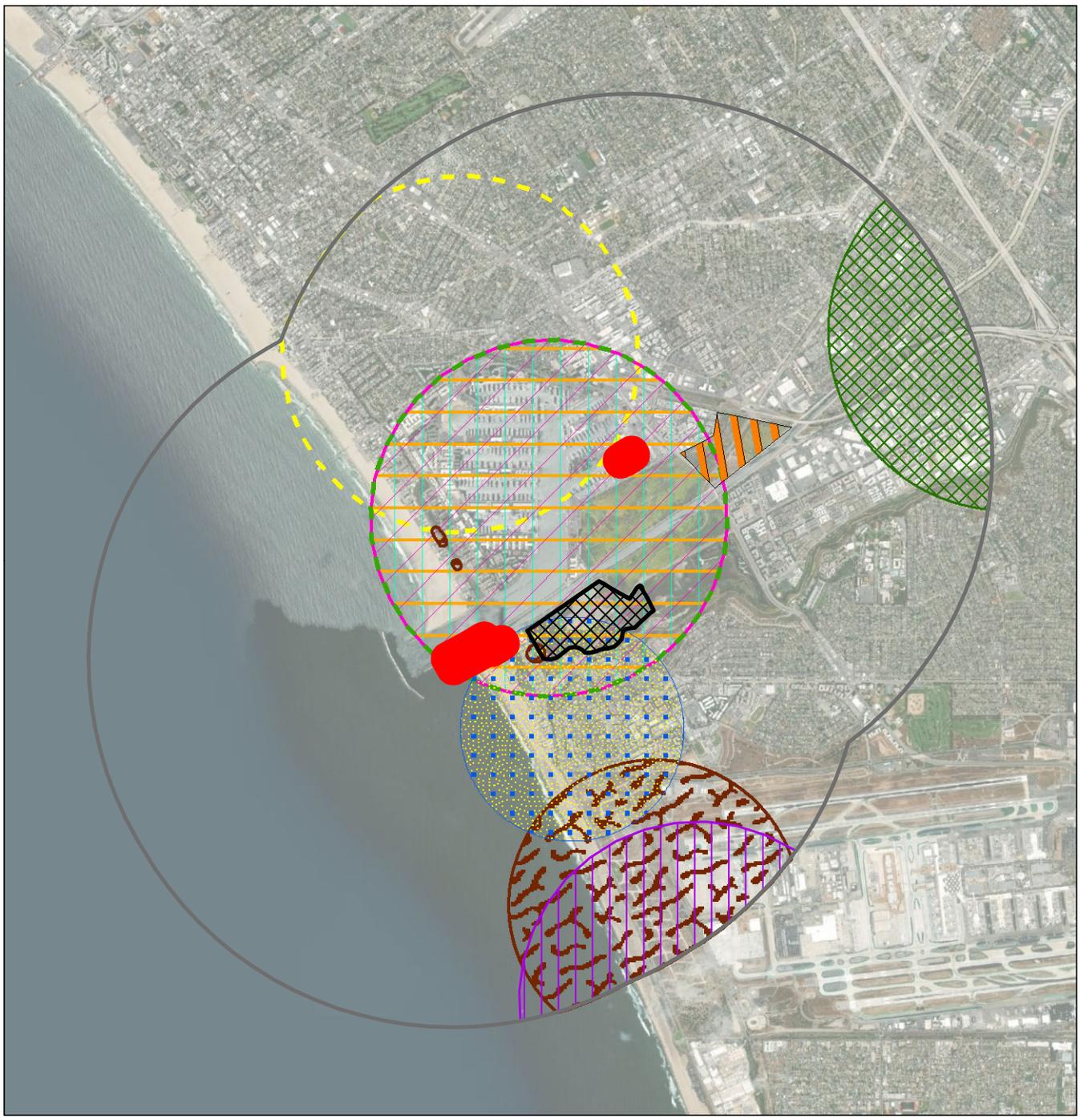
Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-10-02, TR by JV on 2020-10-02, IR by ST on 2020-10-02

Client/Project: Los Angeles County Public Works, Ballona Creek Trash Interceptor Pilot Project, Biological Resources Technical Report  
 184031268

Figure No. **5**

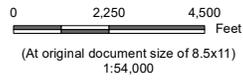
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- Biological Survey Area
- 2 Mile Search Radius
- Plants**
- Ballona cinquefoil
- Brand's star phacelia
- Coulter's goldfields
- Orcutt's pincushion
- San Fernando Valley spineflower

- Ventura Marsh milk-vetch
- beach spectaclepod
- coastal goosefoot
- salt marsh bird's-beak
- southern tarplant
- Habitat**
- Southern Coastal Salt Marsh
- Southern Dune Scrub



*Project Location* Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-30  
 TR by JV on 2020-09-30  
 IR by ST on 2020-09-30

*Client/Project* Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report  
 184031268

*Figure No.*  
**5a**

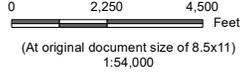
*Title*  
**2 Mile CNDDB Search - Plants**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020, NRCS 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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- Biological Survey Area
- 2 Mile Search Radius
- Animals**
- burrowing owl
- globose dune beetle
- least Bell's vireo
- mimic tryonia (=California brackishwater snail)
- monarch - California overwintering population
- sandy beach tiger beetle
- south coast marsh vole
- southern California legless lizard
- southern California saltmarsh shrew
- wandering (=saltmarsh) skipper
- western pond turtle
- western snowy plover



*Project Location* Prepared by DL on 2020-09-30  
 Ballona Creek TR by JV on 2020-09-30  
 Los Angeles County, California IR by ST on 2020-09-30

*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

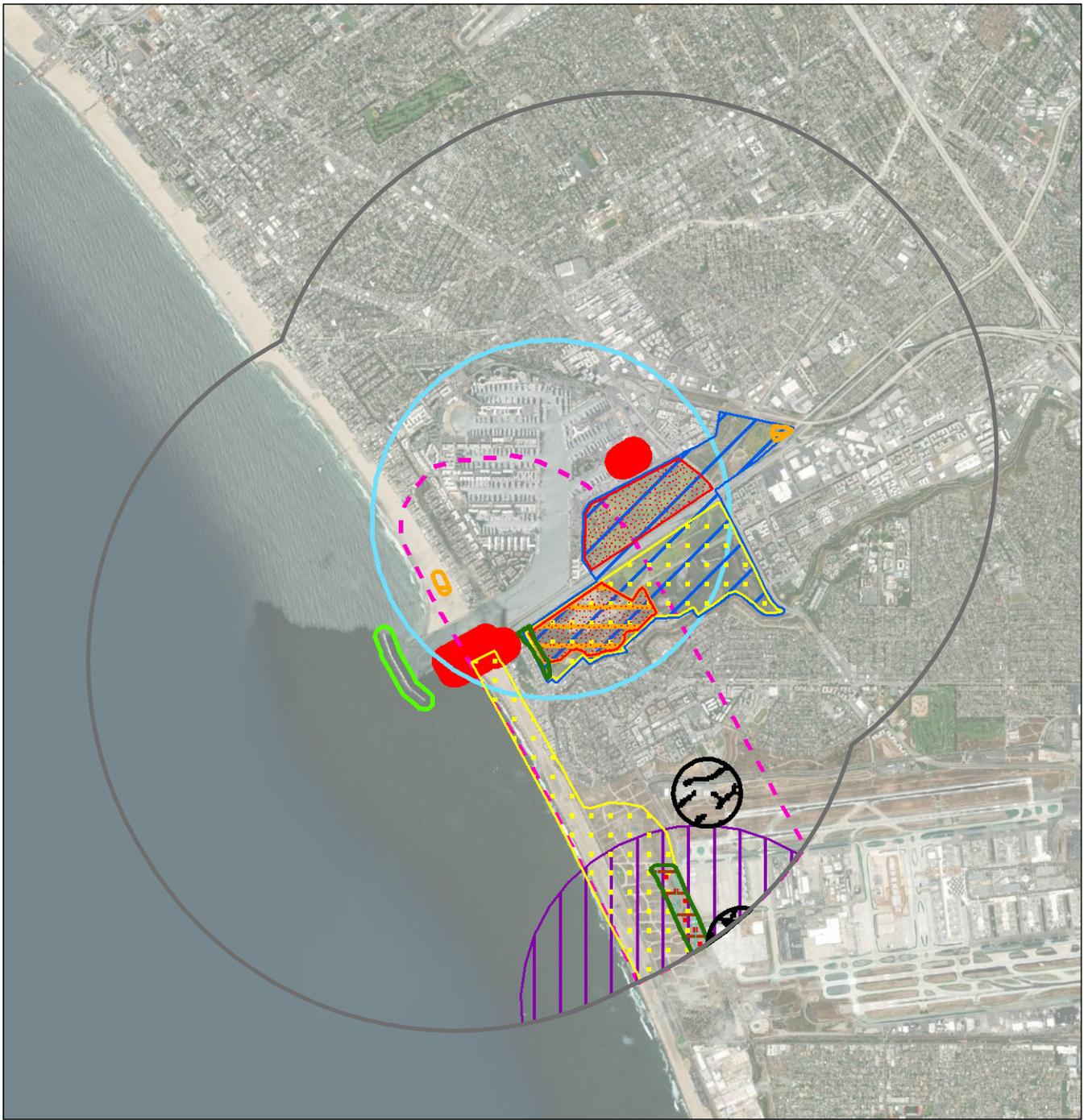
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**5b**

*Title*  
**2 Mile CNDDDB Search - Animals**

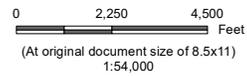
**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020, CNDDDB 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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- |                |                            |  |                                  |
|----------------|----------------------------|--|----------------------------------|
|                | Biological Survey Area     |  | California least tern            |
|                | 2 Mile Search Radius       |  | Crotch bumble bee                |
| <b>Animals</b> |                            |  |                                  |
|                | Belding's savannah sparrow |  | Dorothy's El Segundo Dune weevil |
|                | Belkin's dune tabanid fly  |  | El Segundo blue butterfly        |
|                | Busck's gallmoth           |  | Henne's eucosman moth            |
|                | California black rail      |  | Lange's El Segundo Dune weevil   |
|                | California brown pelican   |  | Pacific pocket mouse             |
|                |                            |  | Riverside fairy shrimp           |



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-30  
 TR by JV on 2020-09-30  
 IR by ST on 2020-09-30

Client/Project: Los Angeles County Public Works Ballona Creek Trash Interceptor Pilot Project Biological Resources Technical Report  
 184031268

Figure No. 5c

Title: 2 Mile CNDDB Search - Animals

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020, NRCS 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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## **Appendix B    PHOTOGRAPHIC LOG**





Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 1			
<b>Direction:</b> North-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the manually controlled tidal gate to Ballona Creek and Del Rey Lagoon without water. Tidal gate is operated by the City of Los Angeles Recreation and Parks.			
<b>Photograph ID:</b> 2			
<b>Direction:</b> North-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the Del Rey Lagoon with water.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 3			
<b>Direction:</b> South			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From south of Ballona Creek looking south at the Del Rey Lagoon. The stand of Invasive Monoculture and Ice Plant Mat Alliance north of the Del Rey Lagoon is depicted.			
<b>Photograph ID:</b> 4			
<b>Direction:</b> West			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> South of Ballona Creek and north of Del Rey Lagoon along the graded path facing west. The photo depicts the ongoing construction south of Pacific Avenue Bridge along 62nd Avenue at Pacific Avenue.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 5	
<b>Direction:</b> West	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern bank of Ballona Creek along the graded path facing west towards the Pacific Avenue Bridge. The photo depicts the high level of bird activity along and within the creek.	

<b>Photograph ID:</b> 6	
<b>Direction:</b> Northeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Pacific Avenue Bridge looking upstream at Ballona Creek.	



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 7	
<b>Direction:</b> Southwest	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern end of the Pacific Avenue Bridge, looking downstream at Ballona Creek.	

<b>Photograph ID:</b> 8	
<b>Direction:</b> Northwest	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> Along the northern boundary of the SA (Ballona Creek North Jetty) looking downstream of Pacific Avenue Bridge. This photo depicts Ballona Creek on the left side of the image and Marina del Rey Harbor Main Channel as the main focal point on the right side of the image.	



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 9			
<b>Direction:</b> Northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> Along the northern boundary of the SA. This photo depicts the paved Ballona Creek Bike Path and Marina del Rey Harbor Main Channel on the left side of the photograph.			
<b>Photograph ID:</b> 10			
<b>Direction:</b> South-southeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek North Jetty adjacent to the Pacific Avenue Bridge. This photo depicts the residential development and boat ramp south of Ballona Creek.			



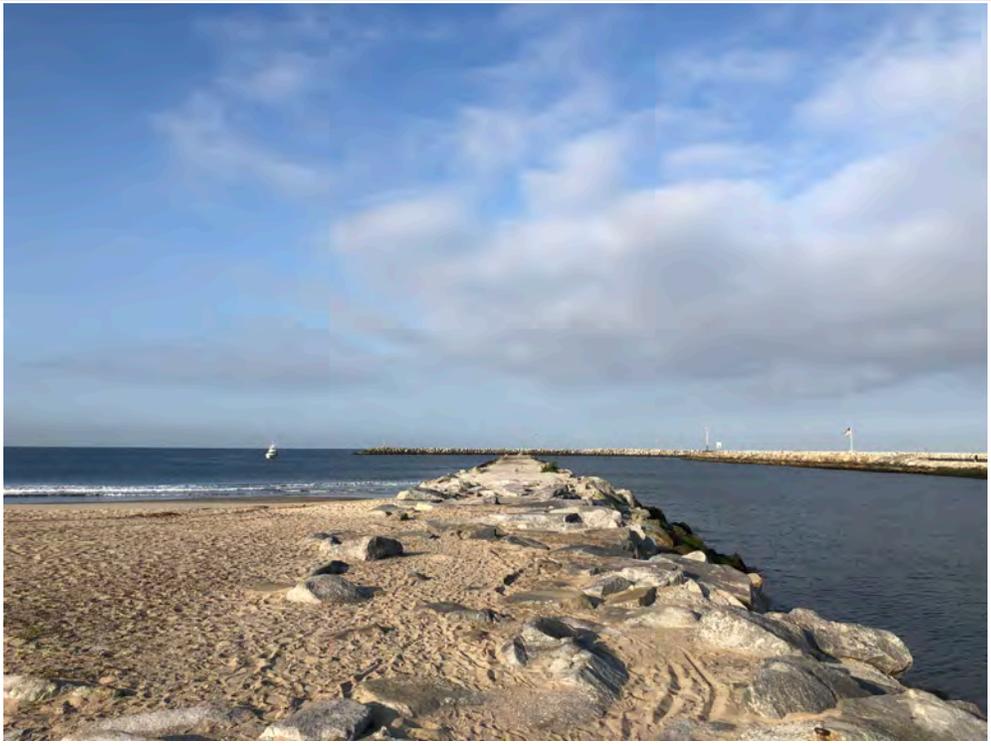
Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 11			
<b>Direction:</b> South-southeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek North Jetty near the western boundary of the SA looking towards Dockweiler State Beach and the residential units along it.			
<b>Photograph ID:</b> 12			
<b>Direction:</b> East-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek South Jetty near the western boundary of the SA looking towards Pacific Avenue Bridge and Playa del Rey residential units along Dockweiler State Beach.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 13	
<b>Direction:</b> West-southwest	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Ballona Creek mouth and South Jetty looking towards Santa Monica Bay.	

<b>Photograph ID:</b> 14	
<b>Direction:</b> Southeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern bank of Ballona Creek looking towards Dockweiler State Beach. The paved bike bath, residential units, and entrance to the lifeguard station are depicted.	

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 15			
<b>Direction:</b> West-southwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> South of Ballona Creek from the Ballona Creek South Jetty facing southwest towards Playa del Rey. The photo depicts the Dune Mat Alliance along the northern margin of Dockweiler State Beach.			
<b>Photograph ID:</b> 16			
<b>Direction:</b> East-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern bank of Ballona Creek looking towards a section of invasive monoculture south of Pacific Avenue Bridge.			



Photographic Log

<b>Client:</b>	<b>Los Angeles County Public Works</b>	<b>Project:</b>	<b>Ballona Creek Trash Interceptor Pilot Project</b>
<b>Site Name:</b>	<b>Ballona Creek</b>	<b>Site Location:</b>	<b>Los Angeles County, CA</b>

<p><b>Photograph ID:</b> 17</p>	
<p><b>Direction:</b> South-southeast</p>	
<p><b>Survey Date:</b> 2/25/2020, 3/2/2020</p>	
<p><b>Comments:</b> From the northernmost margin of Dockweiler State Beach looking towards the beach. The photo depicts the Ice Plant Alliance adjacent to residential units.</p>	



## **Appendix C MARINE BIOLOGICAL TECHNICAL STUDY**



**MARINE BIOLOGICAL ASSESSMENT  
FOR  
THE BALLONA CREEK INTERCEPTOR™ PROJECT  
MARINA DEL REY, CA**

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**October 2020**

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## **1.0 INTRODUCTION**

Public Works is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot project, the Ballona Creek Trash Interceptor™ Pilot Project “Project”, to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ within Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline (Figure 1). The purpose of the Project is to test the efficiency of The Ocean Cleanup’s Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project’s goal is to would capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protecting the environment.

This report documents the in-water marine biological condition at the Project location as well as provides an analysis of potential impacts to habitats and sensitive species. An Essential Fish Habitat (EFH) Assessment for the proposed Project is provided in a separate document.

## **2.0 PROJECT LOCATION AND DESCRIPTION**

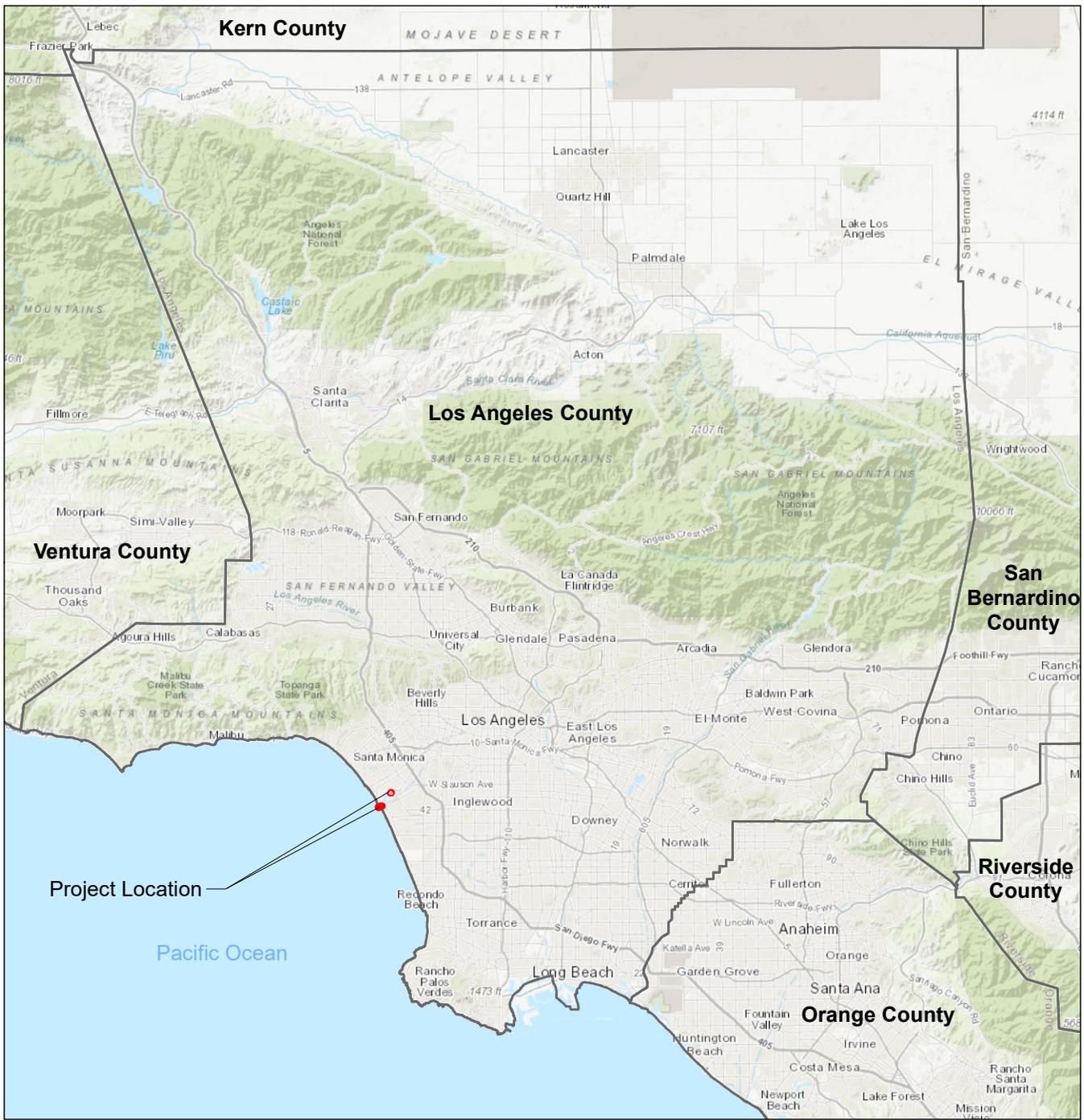
### **2.1 PROJECT LOCATION**

The Project is located within a channelized portion of Ballona Creek, approximately 1.5 miles west of CA-1, 0.5 mile east of the Santa Monica Bay, and immediately southwest of the Ballona Creek-Pacific Avenue Bridge, Marina del Rey South Jetty, and Marina del Rey Harbor Main Channel. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project (Figure 1).

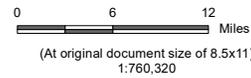
The study area is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats returning to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop with no public access.

### **2.2 PROJECT DESCRIPTION**

The floating Interceptor™ would be a single vessel (Figure 2) moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties (Figure 3). Each mooring would have a concrete pad which would be installed above-grade with the jetty as well as ramps with railings installed and attached to mooring ties to hold the Interceptor™ in place. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™.



■ Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

*Figure No.*  
**1**

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020.
  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
- Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

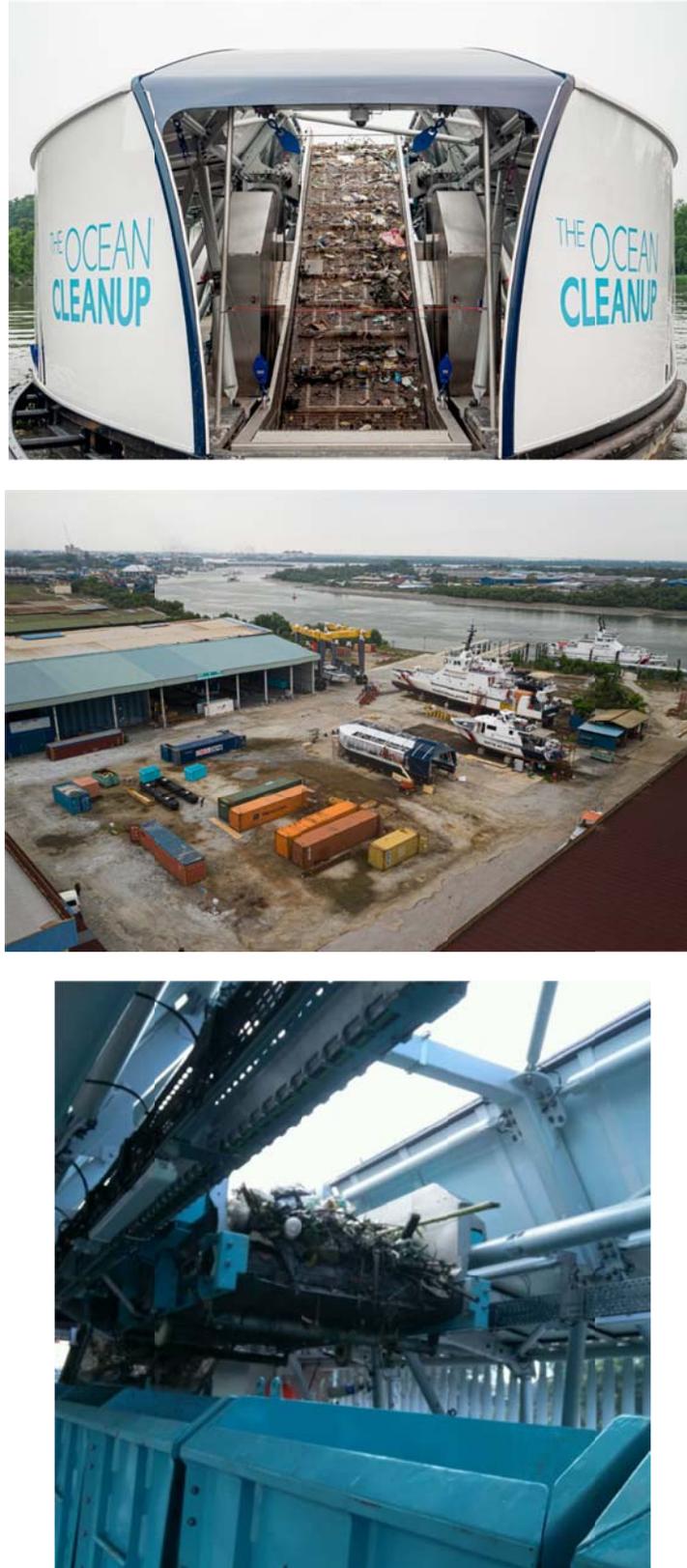


Figure 2. Pictures of Interceptor™ barge in Malaysia with barrier and dumpster barge.



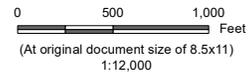
← Existing Bikeways

**Project Footprint**

- Mooring Footprint [0.113 Acres]
- Mooring Construction Staging Areas [0.37 Acres]
- Interceptor Assembly Area [0.62 Acres]
- Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
- Trash Boom
- Mooring Lines

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-28  
 TR by ST on 2020-09-28  
 IR by LM on 2020-09-28

Client/Project: 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

Figure No.

**3**

Title

**Project Vicinity**

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The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ would use both booms during the storm season (October-April), when stormwater flows wash greater amounts of trash and debris into Ballona Creek, and only one boom during the remainder of the year. The southern boom would remain in place while the northern boom would be able to be clipped and unclipped to the Interceptor™ prior to and after storm events. The booms, which would float atop the water would extend 18 inches beneath the water surface, and have a low draft allowing water to pass underneath without significant interference; therefore, not substantially obstructing or diverting the natural flow of water within Ballona Creek. In the event of an emergency, such as higher flow speeds within Ballona Creek, the booms are designed to automatically release and open by detaching from one side of the mooring on top of the jetty.

When the Interceptor™ is nearly full, it automatically sends a message to the local operators to collect the waste. Operators then remove the dumpsters (trash bins), bring them to the side of the Marina del Rey boat harbor, empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpsters back to the Interceptor™. The Interceptor™ pilot program is expected to be deployed and in operation for two storm seasons (up to 24 months).

Construction and installation of the Project would occur over an approximate six-month period. During construction of the moorings, the Ballona Creek North Jetty walkway would be temporarily closed to prevent public access due to safety considerations. Construction of the moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the Project; however, some excavation would be required to remove the existing stone jetty riprap to install the mooring blocks (12 feet wide x 8 feet long). In addition, minor ground disturbance would be required on top of the jetties to allow access for installation of Project components (i.e., Interceptor™ anchoring location, collection boom, and jetty mooring system). Approximately 0.113 acres would be disturbed or developed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings. The Project would involve minimal vehicle trips including material import/ export as well as haul trucks required for construction.

### **3.0 PROJECT REGULATORY REQUIREMENTS**

The proposed project is subject to the following regulations.

#### **3.1 FEDERAL REGULATIONS**

##### **Clean Water Act**

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the CWA, is the major federal legislation governing water quality. The purpose of the federal CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Discharges into waters of the United States are regulated under the CWA. Waters of the United States currently include the territorial seas and traditional navigable waters, perennial and intermittent tributaries

to those waters, certain lakes, ponds, and impoundments, and wetlands adjacent to jurisdictional waters (33 C.F.R. § 328.3). Important applicable sections of the CWA are discussed below:

- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective RWQCB (Regional Water Quality Control Board). A Section 401 permit from the SWRCB (State Water Resources Control Board) or RWQCB would be required for issuance of a permit by the U.S. Army Corps of Engineers (USACE).

### **Rivers and Harbors Appropriation Act**

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403 et seq.), commonly known as the Rivers and Harbors Act (RHA), prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. Under RHA Section 10, the USACE is authorized to permit structures in or over navigable waters. Building or modifying wharves, piers, jetties, and other structures in or over the waters of the United States requires USACE approval through the Section 10 permit process.

In addition, Section 14 (33 U.S.C. § 408), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project.

### **Endangered Species Act**

The Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). The term “harm” is defined as an “act which actually kills or injures wildlife,” including through “significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” The term “harass” means an act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, lead federal agencies are required to consult with the USFWS or NMFS if the lead agency determines that its actions, including permit approvals or funding, may adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency may choose to informally consult with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency may formally consult to ensure full compliance with the ESA.

### **Marine Mammal Protection Act**

The Marine Mammal Protection Act of 1972 (MMPA) prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas and the importation of marine mammals and marine mammal products into the United States. Under the MMPA, “take” is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal” (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal”. NMFS administers the MMPA. Under the 1994 Amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance which:

- **(Level A Harassment)** has the potential to injure a marine mammal or marine mammal stock in the wild; or,
- **(Level B Harassment)** has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) prohibits take of nearly every bird for which members of the bird’s taxonomic family are considered to be migratory. This results in the inclusion of most species of birds afforded protection. Under the MBTA, take means only to kill, directly harm, or destroy individuals, eggs, or nests, or to otherwise cause failure of an ongoing nesting effort.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976 was established to promote domestic and commercial fishing under sound conservation and management principles. NMFS, as a branch of the National Oceanic and Atmospheric Administration (NOAA), implements the act via eight regional Fisheries Management Councils (FMCs). The FMCs in turn prepare and implement Fishery Management Plans (FMPs) in accordance with local conditions. The Pacific FMC is responsible for the Pacific region, in which the study area is located. The FMPs also establish EFH for the species they manage and require consultation by a lead agency with NMFS for actions that may adversely affect EFH. Following receipt of an EFH consultation request, NMFS will provide EFH Conservation Recommendations to the lead agency detailing measures that may be taken by the agency to conserve EFH. Within 30 days of receipt of EFH Conservation Recommendation, the project lead agency must respond in writing, including a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. These measures will be incorporated into the final project.

## **3.2 STATE REGULATIONS**

### **California Coastal Act**

The California Coastal Act (CCA) is intended to provide protection of the unique nature and public interest values of the state’s coastal fringe. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal development permit. The CCA is administered by the California Coastal Commission (CCC) or by local jurisdictions operating under adopted Local Coastal Programs that have been approved by the CCC.

**California Endangered Species Act**

The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050–2098). The CESA defines endangered species as those whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but that may become endangered in the foreseeable future. FGC Section 2080 prohibits the taking of state-listed plants and animals. Unlike the federal ESA, the CESA does not include harassment within its take definition and as such, has a statutorily higher threshold standard for take than does the federal ESA. The California Department of Fish and Wildlife (CDFW) also designates fully protected or protected species as those that may not be taken or possessed without a permit from the California Fish and Game Commission and/or CDFW. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

When a species is both state- and federally-listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination, if take authorization under the CESA is required.

**California Fish and Game Code**

The FGC is implemented by the California Fish and Game Commission, as authorized by Article IV, Section 20, of the Constitution of the State of California. FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. As defined in the Fish and Game Code, “take” means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86). The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. The CDFW oversees the management of marine species through several programs, some in coordination with NMFS and other agencies.

**3.3 LOCAL REGULATIONS****Marina del Rey Land Use Plan**

The Marina del Rey Land Use Plan (LUP) covers the study area, and includes the relevant portion of a local government's general plan, or local coastal element, and are sufficiently detailed to indicate the kinds, location and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of implementing actions (County of Los Angeles 2012). The Marina del Rey LUP covers the study area.

**Marina del Rey Local Coastal Plan**

Local Coastal Program (LCP) means a local government's (a) LUP, (b) zoning ordinances, (c) zoning district maps, and (d) within sensitive coastal resource areas, other implementing actions which, when taken together, meet the requirements of, and implement the provisions and policies of the CCA.

#### 4.0 ENVIRONMENTAL SETTING

The description of the environmental setting of the study area is based on physical and qualitative biological surveys conducted in the study area in April 2020, in addition to literature review. The study area is defined as the area that includes all elements of the project as well as the surrounding areas that could potentially be affected by the project. Above water mapping was completed using existing aerial photographs and Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California data. In-water work was completed using interferometric sidescan sonar (ISS), which provided an image of seafloor backscatter within the entire study area. Sidescan backscatter data were acquired at a frequency of 468 kHz, with a scanning range of 31 meters (102 feet) for both the starboard and port channels, resulting in a 62 meters (204-ft) wide swath. All data was collected in latitude and longitude using the North American Datum of 1983 (NAD 83). The survey was conducted by running transects spaced to allow for overlap between adjoining sidescan swaths. Transect surveys were performed until the entirety of the survey area was captured in the survey record. A Remotely Operated Vehicle (ROV) was used to groundtruth targets of interest (substrate, biota) and to photo document. Following completion of the survey, the data was converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the study area. Bathymetric data were processed using standard filtering and used to develop slope and relief maps. Surficial features and mappable habitat types were then digitized by a GIS specialist with expertise in interpreting sonar data for habitat mapping. The GIS specialist inspected the sonar mosaic and delineated habitats and features using ESRI ArcGIS software. Resources of interest were then digitized to show their distribution within the survey area. In addition, a qualitative survey of the rip rap revetment was conducted to note dominant biota. No grab sampling or otter trawls were conducted.

##### 4.1 HABITATS WITHIN THE STUDY AREA

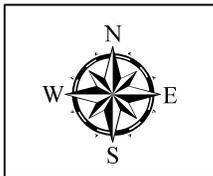
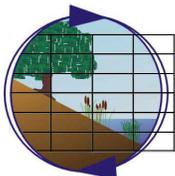
Habitats were delineated into two categories: upland and in-water (or marine), with sub-categories classified if present. They were further differentiated by elevation and/or depth, with upland habitat encompassing the area above +7.8 ft MLLW, intertidal habitat encompassing the area between +7.8 and -2.2 ft MLLW, and subtidal habitat below -2.2 ft MLLW. A summary of the various habitat types within the study area is provided in Table 1, depicted in Figure 4, and described in the following sections.

**Table 1. Habitat summary in study area.**

Category	Elevation	Habitat Type	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Upland	>+7.8 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	3,937	42,377
Marine	Intertidal +7.8 to -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	5,112	55,021
		Unvegetated Soft Bottom	1,629	17,532
		Sub-Total	6,740	72,553
	Subtidal Below -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	1,495	4,934
		Unvegetated Soft Bottom	32,909	354,228
		Debris/Cobble	95	1,028
		Sub-Total	34,499	371,350
Grand Total			45,170	486,208

### Legend

- Study Area
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 4**

**Upland Area**

The upland area of the study area consists of rip rap revetment with and without concrete fill, and covers approximately 3,937 m<sup>2</sup> (42,377 ft<sup>2</sup>) (Table 1). The area is highly developed, and no special status flora or wildlife species occur in the upland areas (Figure 5).



**Figure 5. Upland area consists of rip rap revetment with and without concrete fill. Left image is north jetty looking downstream; Right image is south jetty looking downstream.**

**Intertidal/Shallow Subtidal Riprap Revetment**

The shoreline along the perimeter of the study area is armored with riprap revetment in the upper intertidal and shallow subtidal zones and covers approximately 6,607 m<sup>2</sup> (71,115 ft<sup>2</sup>) (Table 1 and Figure 5), where it transitions to unvegetated intertidal and shallow subtidal habitat.

Tide level influences the development of the riprap community, and bare rock is more common in the upper intertidal zone. Macroalgae were uncommon in the upper intertidal zone with coverage limited to small amounts of red algal turfs or occasional leafy green algae (*Ulva* sp.). Barnacles (*Balanus*, *Chthamalus*, *Tetraclita*) were abundant in the upper intertidal zone, as well as various limpets (*Lottia* spp.) and snails (*Littorina* sp., *Acanthina spirata*) (Figure 6).

In the mid to low intertidal zone, bare rock was less visible and there was a higher percentage of coralline and other small attached algae (*Chondracanthus* spp., *Ulva* sp., *Corallina* spp., *Mazzaella* spp., *Leathesia* sp., *Petrocelis*, *Gymnogongrus* spp.), in addition to other turf species (Figure 6). Observed invertebrates included sponges, tunicates, tube snails (*Serpulorbis squamigerus*), limpets (*Lottia* spp.), mussels (*Mytilus galloprovincialis*), oysters (*Crassostrea gigas*), and anemones (*Anthopleura* sp.). Similar species were also observed in the shallow subtidal zone, including red algal turfs, encrusting algae, articulated corallines, and sessile invertebrates (Figure 7).



**Figure 6. Shoreline of study area depicting revetment from upper intertidal to shallow subtidal zone.**

### **Subtidal Unvegetated Habitat**

The majority of the study area is considered to be shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt, with areas of accumulated shell hash and debris, and covers approximately 32,909 m<sup>2</sup> (354,228 ft<sup>2</sup>) (Table 1 and Figure 8). Sampling conducted in the Ballona Creek estuary for the Bight '08 Regional Survey noted that the sediment consisted of approximately 56% sand and 44% fines (Table 2; SCCWRP 2011a). In addition, historical sediment quality data indicated that sediments within the tidal reach of Ballona Creek are impacted by metals, pesticides, polycyclic aromatic hydrocarbons (PAHs), and other organic compounds (USACE 2017), and that Total Maximum Daily Loads (TMDLs) for trash, bacteria, and metals in the water column, and for toxics including PAHs, pesticides, and other organic compounds in sediment and fish tissue have been developed to address exceedances of these constituents in Ballona Creek.



Figure 7. Study area transitions from shallow subtidal revetment to unvegetated subtidal habitat.

Table 2. Sediment grain size in Ballona Creek from Bight '08 survey.

Classification	Mean Percent
Total Silt and Clay (less than 0.0625mm)	43.9
Very Fine Sand (0.0625 to 0.125mm)	27.8
Fine Sand (0.125 to 0.25mm)	20.1
Medium Sand (0.25 to 0.5mm)	7.5
Coarse Sand (0.5 to 1mm)	0.7
Very Coarse Sand (1 to 2mm)	0.0
Gravel (greater than 2mm)	0.0



**Figure 8. Unvegetated soft bottom habitat ranged from barren sandy areas to areas with shell hash and debris.**

Organisms that live in soft bottom habitat are referred to as infauna, while those organisms that live on soft bottom habitat are referred to as epifauna. The density (number of individuals per unit area) and species composition of these organisms are influenced by sediment grain size, amount of nutrients, water depth, pollutant levels in the sediments and overlying water, and time since the last disturbance by vessel activity and/or construction, and therefore can serve as an indicator of habitat quality. Several benthic fauna surveys have been conducted within Ballona Creek. Common infaunal organisms recorded in Ballona Creek during the Bight '08 Regional Survey included polychaete worms (*Capitella* sp., *Pseudopolydora* sp., *Polydora* spp., *Neanthes* sp.), amphipods (*Grandidierella* spp., *Mayerella acanthopoda*), and molluscs (*Saxidomus nuttalli*, *Mytilus* sp., Pectinidae, *Musculista senhousia*) (SCCWRP 2012). Benthic epifauna observed during the Bight '08 Regional Survey and other otter trawl sampling noted a variety of organisms including crabs, molluscs, and sea stars (Table 3; M&A 2009, SCCWRP 2011b).

**Table 3. Benthic epifauna observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09
Bivalve	<i>Chione</i> sp.		X
Blackspotted bay shrimp	<i>Crangon nigromaculata</i>	X	
Calico scallop	<i>Argopecten ventricosus</i>		X
California aglaja	<i>Navanax inermis</i>		X
California bubble	<i>Bulla gouldiana</i>		X
Crab	<i>Cancer</i> sp.		X
Hydroid	Hydrozoa	X	
Mediterranean mussel	<i>Mytilus galloprovincialis</i>		X
Northern kelp crab	<i>Pugettia producta</i>		X
Nudibranch	<i>Dendronotus frondosus</i>	X	
Shore crab	<i>Hemigrapsus oregonensis</i>		X
Slender crab	<i>Metacarcinus gracilis</i>	X	
Spider crab	<i>Pyromaia tuberculata</i>	X	X
Spiny sand star	<i>Astropecten armatus</i>	X	
Winged sea slug	<i>Gastropteron pacificum</i>		X

Several fish surveys have been conducted in the Ballona Creek estuary and include the Bight '08 Regional Survey, otter trawl sampling conducted by Merkel & Associates in 2009, and habitat mapping for this project which utilized ROV. The results are summarized in Table 4, and the more common fishes included Round Stingray (*Urobatis halleri*), Spotted Sand Bass (*Paralabrax maculatofasciatus*), Black Croaker (*Cheilotrema saturnum*), Specklefin Midshipman (*Porichthys myriaster*), gobies (Gobiidae), flatfishes (*Paralichthys californicus*, *Pleuronichthys guttulatus*, *Parophrys vetulus*, *Xystreurys liolepis*, *Citharichthys sordidus*, *Pleuronichthys ritteri*) (M&A 2009, SCCWRP 2011b). Although two individual southern California steelhead (*Oncorhynchus mykiss irideus*) were observed in Ballona Creek in 2008 (upstream of the Ballona Reserve), the creek and its tributaries are heavily urbanized and do not provide suitable foraging or spawning habitat (USACE 2017).

#### **Subtidal Vegetated Habitat**

Vegetated subtidal habitats are an essential component of southern California's coastal marine environment. Eelgrass (*Zostera marina*) beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. The survey of in-water habitats completed in April 2020 detected no eelgrass in the shallow waters of the study area.

**Table 4. Fish species observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09	M&A '20
Bay Pipefish	<i>Syngnathus leptorhynchus</i>		X	
Black Croaker	<i>Cheilotrema saturnum</i>		X	
California Halibut	<i>Paralichthys californicus</i>	X	X	
California Lizardfish	<i>Synodus lucioceps</i>	X		
CIQ goby	<i>Clevelandia/Ilypnus/Quietula complex</i>		X	
Diamond Turbot	<i>Pleuronichthys guttulatus</i>		X	
English Sole	<i>Parophrys vetulus</i>	X		
Fantail Sole	<i>Xystreureys liolepis</i>	X	X	
Hornyhead Turbot	<i>Pleuronichthys verticalis</i>	X	X	
Kelp Bass	<i>Paralabrax clathratus</i>			X
Pacific Sanddab	<i>Citharichthys sordidus</i>	X		
Queenfish	<i>Seriphus politus</i>		X	
Roughback Sculpin	<i>Chitonotus pugetensis</i>	X		
Round Stingray	<i>Urobatis halleri</i>		X	
Salema	<i>Xenistius californiensis</i>		X	
Sargo	<i>Anisotremus davidsonii</i>		X	
Shiner Surfperch	<i>Cymatogaster aggregata</i>		X	
Shovelnose Guitarfish	<i>Rhinobatos productus</i>		X	
Speckled Sanddab	<i>Citharichthys stigmaeus</i>	X		
Specklefin Midshipman	<i>Porichthys myriaster</i>	X		
Spotted Bay Bass	<i>Paralabrax maculatofasciatus</i>			X
Spotted Turbot	<i>Pleuronichthys ritteri</i>	X		
Staghorn Sculpin	<i>Leptocottus armatus</i>		X	
Striped Kelpfish	<i>Gibbonsia metzi</i>		X	
Topsmelt	<i>Atherinops affinis</i>		X	X
Yellowfin Croaker	<i>Umbrina roncadore</i>		X	
Zebra Perch	<i>Kyphosus azureus</i>			X

Note: Bight '08 sampling conducted with 25' otter trawl; M&A '09 sampling conducted with 10' otter trawl; M&A '20 sampling conducted with ROV

### **Open Water**

Open water/water column habitat due to its three dimensional component, is the largest habitat type within the study area, and supports pelagic fishes and occasionally marine mammals. A common schooling species observed within the study area is Topsmelt (*Atherinops affinis*), and while not observed, other schooling species such as Northern Anchovy (*Engraulis mordax*) and Sardines (*Sardinops sagax*) may also occur in the area. The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers. These fish also provide an important forage base for predatory fish species.

#### 4.2 WETLANDS AND SENSITIVE HABITATS

Wetlands, as defined by the USACE, are not present within the study area. The nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area.

Eelgrass is a rooted aquatic plant that inhabits shallow soft bottom habitats in quiet waters of bays and estuaries, as well as sheltered coastal areas. It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Eelgrass is considered a Submerged Aquatic Vegetation (SAV), and a “special aquatic site” under the CWA. Pursuant to the MSA, eelgrass is designated as a Habitat Area of Particular Concern (HAPC) within EFH for various federally-managed fish species within the Pacific Coast Groundfish FMP (NMFS 2014a). As noted in the Subtidal Vegetated Habitat section, eelgrass was not detected within the study area in April 2020.

#### 4.3 WILDLIFE CORRIDORS

Ballona Creek provides movement for marine fish species into and out of the study area, and occasionally marine mammals such as California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina richardsi*) have been observed in the Ballona Creek channel (USACE 2017). Several whale species migrate along the coast of California, including the California gray whale (*Eschrichtius robustus*). The peak northward migration of male gray whales occurs in mid-March, followed two months later by the second migration wave, which is composed of cows and calves. Whales typically do not occur in harbors like Marina del Rey or estuaries like Ballona Creek (USACE 2017). While mobile animals make use of the creek mouth, it is not considered a wildlife corridor (USACE 2017).

#### 4.4 SENSITIVE WILDLIFE

Table 5 lists sensitive animal species with the potential and likelihood to occur within the study area. Only two species listed by USFWS and/or CDFW as federally or state endangered or threatened have the potential to occur within the study area: the federally endangered steelhead and federally threatened green sea turtle (*Chelonia mydas*). While two steelhead were observed upstream of the study area in Ballona Creek in 2008, the upstream habitat was considered low quality, providing limited foraging, spawning or rearing habitat (USACE 2017). Further, subsequent surveys have not detected steelhead within Ballona Creek (USACE 2017).

Green sea turtles are known to occur in the warm water discharge of a Long Beach power plant, but are rarely sighted in Santa Monica Bay. Due to lack of required water temperatures, food sources, and nesting habitat within Ballona Creek they are unlikely to regularly occur in the study area.

Finally, several species of marine mammals which are protected by the MMPA may occur in the study area (Table 5). California sea lion (*Zalophus californianus californianus*) and, to a lesser extent, Pacific harbor seal (*Phoca vitulina richardsi*) are the two most common species of marine mammals that occur within harbors and bays. California sea lion and Pacific harbor seal may occasionally be observed in the vicinity of the study area, but are not expected to utilize the area. Dolphins and whales are not anticipated to be present within the study area (USACE 2017).

**Table 5. Sensitive species with potential to occur within the study area.**

Common Name	Scientific Name	Status	Occurrence in Study Area
<b><u>Fish</u></b>			
Southern California Steelhead	<i>Oncorhynchus mykiss irideus</i>	FE; SSC; S1	Very Low Potential - Migrate into fresh water streams when sandbars breach during winter and spring rains. Occur in coastal streams with water temperatures < 15°C. Need cool, clear water with in-stream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean. Spawning habitat consists of gravel substrates free of excessive silt. In 2008, observed in Ballona Creek approximately 2.5 miles upstream of the Marina Freeway overpass; however, focused aquatic surveys from 2009-2011 have not detected this species on the study area. No spawning habitat available in Ballona Creek (USACE 2017).
<b><u>Reptiles</u></b>			
Green Sea Turtle	<i>Chelonia mydas</i>	FT; S1	Very Low Potential - Inhabits coastal areas for benthic feeding and beaches for nesting. In the eastern North Pacific, green sea turtles have been sighted from Baja California to southern Alaska. While turtles commonly occur from San Diego southward, they have an established population at the San Gabriel River estuary and Los Cerritos Wetlands, 30 miles to the south. Rare sightings are reported in Ballona Creek (USACE 2017).
<b><u>Marine Mammals</u></b>			
Pacific Harbor Seal	<i>Phoca vitulina richardsi</i>	MMPA	Low Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
California Sea Lion	<i>Zalophus californianus californianus</i>	MMPA	Moderate Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
Coastal Bottlenose Dolphin	<i>Tursiops truncatus</i>	MMPA	Low Potential – Highly mobile within the inshore waters of Santa Monica Bay (Fandel et al. 2015).
California Gray Whale	<i>Eschrichtius robustus</i>	MMPA	Very Low Potential – Regular migrant in offshore waters, but uncommon in bay and nearshore waters.

**Notes:** FE – Federally Endangered; FT – Federally Threatened; MMPA – species protected by the Marine Mammal Protection Act; SSC – CDFW Species of Special Concern; S1 – Critically Imperiled - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

## 5.0 IMPACT ANALYSIS

The study area is similar to other developed shallow embayments and estuaries located in coastal areas in the Southern California Bight with regard to distribution of habitats and biological features. This analysis focuses on stressors associated with the proposed project elements (i.e., upland construction, vessel operations, and shading) and their potential impact to biological resources including in-water habitat (i.e., intertidal/shallow subtidal riprap revetment, unvegetated subtidal habitat, open water), upland habitat, wildlife corridors, and sensitive species within the study area. As noted in the project description, no in-water construction (e.g., dredging, filling, pile driving) is proposed, and the potential stressors from the proposed project include:

- Mooring construction (in upland area)
- Barge placement
- Barge maintenance operations

Since it is anticipated that elements of the project will be phased, the impacts are analyzed by habitat type and based on the potential stressor.

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region (Santa Monica Bay), the sensitivity of the resource to activities associated with the proposed project, and the duration or ecological ramifications associated with the effect. Per California Environmental Quality Act (CEQA) Guidelines, Section 15000 et seq., impacts are considered significant if they would result in:

- Degradation of critical habitat or reduction in the population size of a listed species (threatened or endangered);
- Degradation of rare or biologically valuable habitat;
- A measurable change in ecological function within the project vicinity;
- A measurable change in species composition or abundance beyond that of normal variability;
- A substantive loss of water surface area through fill or surface water coverage as a result of permanent structures such as docks, wharves, and permanently moored vessels. Small structures such as moorings, navigational aids, individual or widely spaced piles do not result in a substantive loss of water area; or
- An obstruction or alteration of circulation patterns that result in a discernable degradation of water mixing, circulation, or flushing to the extent that biota would be negatively affected in the system.

Impacts to habitats and wildlife can be measured as direct and/or indirect, as well as permanent or temporary. Direct impacts are those that have a direct impact on habitats or wildlife and occur contemporaneously with the action. Direct impacts of in-water construction to wildlife include immediate physical and physiological impacts such as abrupt changes in behavior, flight response, diving, evading, flushing, cessation of feeding, and physical impairment or mortality. Direct impacts to habitats can include damage from construction activities, as well as permanent habitat loss due

to project construction. In contrast, indirect impacts are effects that are caused by or will result from the proposed action at a later time, but are still reasonably certain to occur.

### 5.1 UPLAND AREA IMPACTS

The proposed project consists of construction of six concrete mooring/anchoring pads with each pad covering approximately 76 m<sup>2</sup> (820 ft<sup>2</sup>) for a total construction footprint of approximately 457 m<sup>2</sup> (4,920 ft<sup>2</sup>) on top of the existing rip rap revetment (Table 6 and Figure 9). The construction footprint consists of rip rap revetment with and without concrete fill and supports no special status wildlife or flora species or sensitive habitat. Therefore, temporary impacts on upland habitat are expected, but no significant impacts to biological resources on upland habitat are anticipated from the implementation of the proposed project.

**Table 6. Impact summary for marine habitats.**

Project Element	Category	Habitat Type	Nature of Impact	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Mooring Footprint	Upland Habitat	Man-Made Structure (Rip-Rap Revetment)	Construction/ Fill	457	4,920
Interceptor™ Tie Down	Marine Habitat	Unvegetated Soft Bottom	Shading	385	36
Interceptor™ Footprint	Marine Habitat	Unvegetated Soft Bottom	Surface Cover/ Shading	56	603

### 5.2 IN-WATER HABITAT IMPACTS

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

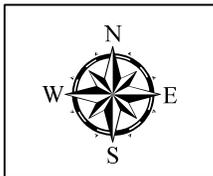
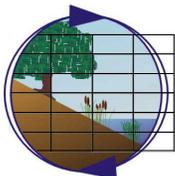
The mooring platforms placed on top of the rip rap revetment will be used to stabilize the Interceptor™ with chain (Figure 3). The chain is anticipated to run just below the waterline but would not rest on the seafloor, and the two upstream platforms would anchor the floating trash booms that would funnel waste to the Interceptor™ barge. The project will not directly impact the intertidal/shallow subtidal revetment, and therefore, no impacts on intertidal/shallow subtidal revetment habitat are expected, and no significant impacts to biological resources associated with intertidal/shallow subtidal revetment are anticipated from the implementation of the proposed project.

#### **Intertidal and Subtidal Unvegetated Habitat**

Barge placement and tie downs would have a direct impact to approximately 92 m<sup>2</sup> (989 ft<sup>2</sup>) of intertidal and subtidal unvegetated habitat including the associated benthic community due to shading (Table 6 and Figure 9). Since the barge is floating, there would be no direct loss or mortality of any benthic infauna and epifauna within the barge footprint, and since eelgrass is not present, no shading impacts to eelgrass would occur. The impact area is relatively small and there is considerable similar soft bottom habitat immediately adjacent to the project footprint, and therefore, impacts associated with barge placement are considered less than significant.

**Legend**

-  Study Area
-  Interceptor Tie Downs
-  Interceptor Footprint
-  Mooring Footprint
-  Debris
-  Revetment
-  Sand



**Habitat Map Existing Conditions and Project Elements**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 9**

In addition, the barge would result in a 56 m<sup>2</sup> (603 ft<sup>2</sup>) increase of surface area coverage; an increase in surface cover would decrease open water habitat (Table 6). This would decrease the foraging habitat available for piscivorous avian species, although given the relatively small areas affected, this increase in surface coverage would not be considered significant.

### **Subtidal Vegetated Habitat**

No eelgrass vegetated habitat was detected in the study area and therefore, no impacts are expected.

### **Open water**

Since no in-water construction activities are proposed, effects from construction such as temporary and localized increases in turbidity and sedimentation within the water column, or noise (enonification) which can result in temporary and or permanent impacts to organisms in the water are not expected. With respect to noise, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected. During construction, the Project would only require the use of some equipment (e.g. saws, generators, air compressors, pump, cement mixers) along the adjacent jetty, not within the Ballona Creek channel. Accordingly, given existing noise and vessel traffic disturbance, a short term installation period, minimal noise associated with the solar-powered operation of the water flow-through system the Project is not expected to create long-term noise disturbance or cause associated harm to organisms in the water column. And given the location of the project, it is anticipated that water velocities will be tidally and storm driven, and that the placement of the barge and barriers would not meaningfully alter water velocities, sedimentation rates, or circulation patterns in the study area. As noted above, the proposed project would temporarily result in an increase of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>) of surface area coverage (Table 6). This increase in surface coverage (or loss of open water habitat) is not expected to affect foraging by piscivorous avian species and is not considered significant.

### **5.3 IMPACTS TO WETLANDS AND SENSITIVE HABITATS**

As described above, the nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area. The proposed project would not alter water flow or water quality to marsh habitat, and is not anticipated to degrade marshlands in any way. Therefore no significant impacts to wetlands are anticipated to occur.

Eelgrass beds are considered to be a sensitive habitat and “special aquatic site” under the CWA and are designated as EFH, and as noted in the Subtidal Vegetated Habitat section, no eelgrass was present within the study area and therefore, no impacts to eelgrass habitat are anticipated to occur.

### **5.4 IMPACTS TO ESSENTIAL FISH HABITAT**

As part of the EFH consultation process, the guidelines require Federal action agencies to prepare a written EFH Assessment describing the effects of that action on EFH (50 CFR 600.920(e)(1)). The EFH Assessment is a necessary component for efficient and effective consultations between a federal action agency and NMFS. In the case of the project, work proposed would require

permitting under Section 10 of the RHA. For this permit action, the USACE is the lead federal action agency. An EFH Assessment for the proposed project is provided in a separate document.

## **5.5 IMPACTS TO WILDLIFE CORRIDORS**

As described above, the study area does not provide any specific wildlife movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. Consequently, impacts of the proposed project on wildlife corridors, movement of resident and migratory species, and usage of nursery sites are considered to be less than significant.

## **5.6 IMPACTS TO SENSITIVE WILDLIFE**

Table 5 provides a summary of sensitive animal species that have potential to occur within the study area. The following text expands on the likelihood of occurrence for these species, and describes potential impacts to sensitive species that may result from project implementation.

### **Fish**

Although two southern California steelhead were observed in Ballona Creek in 2008, this species is expected to have a less than reasonable likelihood of occurring due to the lack of suitable conditions, the species not being detected during recent surveys, and the study area being outside their known range, and therefore no impacts to steelhead are expected from the proposed project.

### **Reptiles**

Environmental threats to sea turtle populations include contamination from coastal runoff, plastic and other debris, fueling facilities, marina and dock construction, dredging, aquaculture, oil and gas exploration and extraction, and increased underwater noise and boat traffic that can degrade marine habitats used by marine sea turtles. As described in Section 5.2 above, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected for local species. Sea turtles swimming or feeding at or just beneath the surface of the water are particularly vulnerable to boat and vessel strikes, which can result in serious propeller injuries and death. Potential impacts to green sea turtle from the proposed project are primarily related to construction activities associated with barge placement and vessel traffic. Protective measures included in the project to minimize impacts to sea turtles include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to sea turtles are considered to be less than significant.

### **Marine Mammals**

Harbor seals and California sea lions are commonly observed in Santa Monica Bay. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the study area or vicinity, although they may make occasional transient use of the area. No in-water construction is anticipated, but vessel traffic will occur during barge placement and maintenance, and any marine mammals would be expected to leave the site for adjacent waters if disturbed by project activities. However, the MMPA prohibits “take” of marine mammals. The definition of “take” under the MMPA, like that of the ESA, includes “harassment”. For this reason, a potentially significant impact to marine mammals could occur if animals are disturbed during project activities, even if they are not harmed by the activities.

Similar to sea turtles, potential impacts to marine mammals from the proposed project are primarily related to project activities associated with vessel traffic. Marine mammals could be struck by boats or boat motors at the study area. In addition, boat noise generated during the installation period and operational activities, as well as, noise associated with the solar-powered operation of the water flow-through system are not expected to impact marine mammals or sea turtles. However, protective measures included in the project to minimize impacts to marine mammals include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to marine mammals are considered to be less than significant.

## 5.7 CUMULATIVE IMPACTS

Cumulative effects are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts can be derived from a single project or a number of separate projects, and is further defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Based on the definitions provided under CEQA, the following analysis assumes that a significant adverse cumulative biological resources impact would occur where the construction or operation of the cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, result in loss or fragmentation of sensitive habitats, or affect the functionality of a planned conservation area. As discussed above, no significant impacts to sensitive habitats or biological resource from the proposed project are anticipated, and any potential impacts to sensitive animals are reduced to less than significant by incorporation of protective measures during construction.

## 6.0 MITIGATION AND PROTECTIVE MEASURES

### 6.1 MARINE RESOURCE MITIGATION

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal rip rap revetment habitat since no in-water construction is proposed.

#### **Intertidal and Subtidal Unvegetated Habitat**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal unvegetated habitat since no in-water construction is proposed.

#### **Subtidal Vegetated Communities**

Based on current project design, no mitigation would be required for eelgrass since no eelgrass is present within the study area.

#### **Surface Coverage**

Based on current project design, no mitigation would be required for surface coverage since the project would result in a temporary small increase in surface coverage of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>).

### **Open Water**

Based on current project design, no mitigation would be required for open water habitat since no in-water construction is proposed.

## **6.2 SENSITIVE SPECIES MITIGATION**

### **Reptiles**

To mitigate potential impacts to eastern Pacific green sea turtles to a less than significant level, the following measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

### **Mammals**

To mitigate potential impacts to marine mammals to a less than significant level, the following construction measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

## **7.0 CONCLUSIONS**

The proposed project would be expected to result in limited impacts to in-water biota and habitats found in the study area. Construction is limited to upland construction in an urbanized area, with no in-water construction proposed, although it is anticipated that tug boats would be used for barge placement and maintenance, including the installation of mooring chain which is anticipated to run just below the waterline but not along the seafloor. Any impact associated with barge placement is anticipated to be of a short-term, temporary nature and is not expected to have permanent or population-level impact to sensitive habitat or species, EFH, or managed fish species. One potential impact may occur to marine reptiles (e.g., sea turtles) and marine mammals (e.g., California sea lion and harbor seal) which could be struck by boats or boat motors at the study area. Any disturbance to sea turtles or marine mammals is considered harassment and would be significant. While it is unlikely that sea turtles or marine mammals would occur in the study area, incorporation of the protection measures listed above would reduce any impacts to less than significant. No significant impacts to wetlands, upland habitat, wildlife migration or corridors are anticipated. Cumulative impacts are considered to be less than significant.

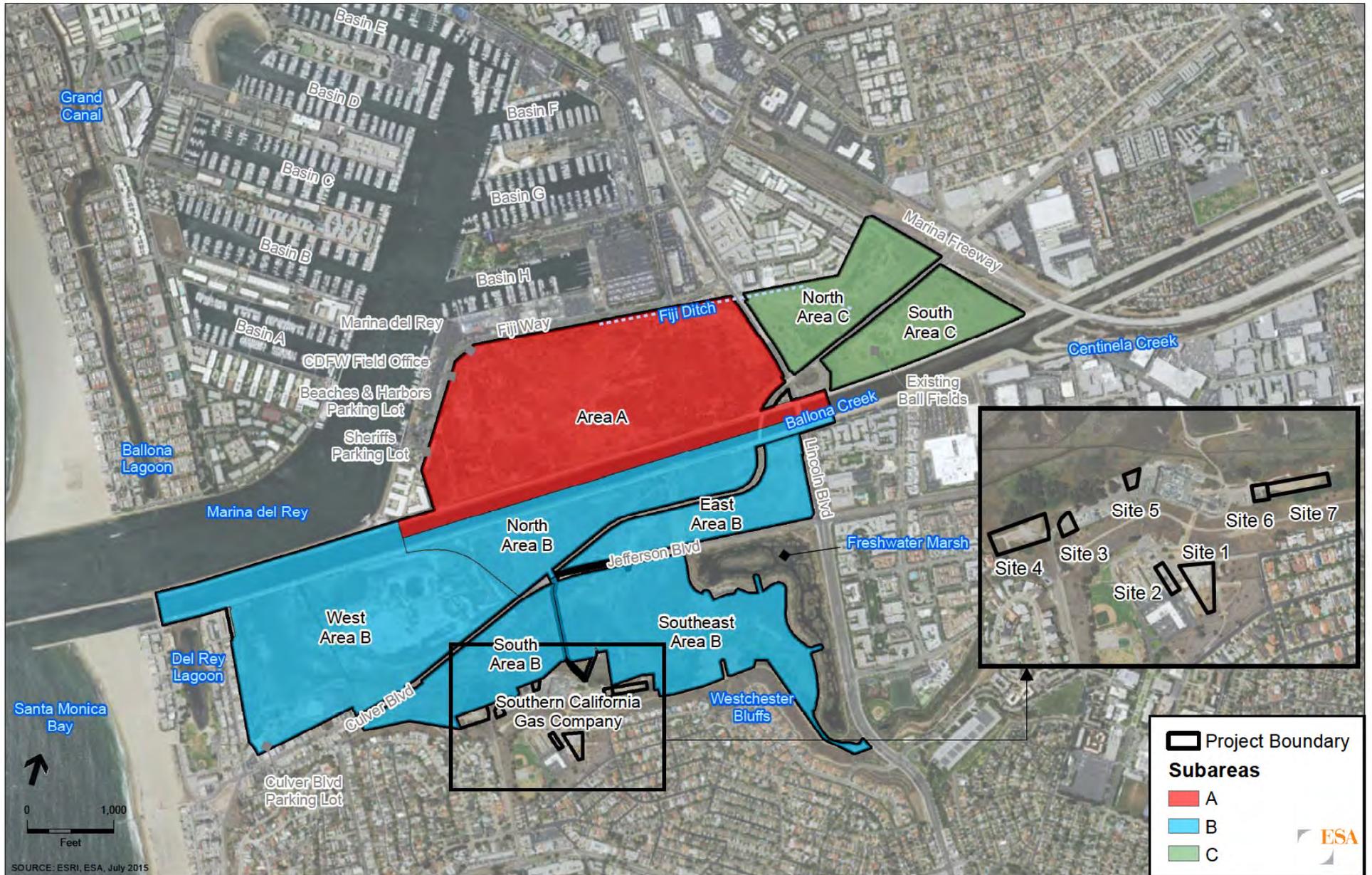
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**Appendix D BALLONA WETLANDS ECOLOGICAL RESERVE  
MAP AND BOUNDARIES**







**Ballona Creek Trash Interceptor™ Pilot  
Project**

Essential Fish Habitat Assessment

October 21, 2020

Prepared for:

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Essential Fish Habitat Assessment

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Prepared by                     *Priya Pratap*                      
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**Michael Weber, Senior Principal Scientist**





**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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## Acronyms and Abbreviations

°F	degree Fahrenheit
BMPs	Best Management Practices
DPS	distinct population segment
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FMP	fishery management plan
FR	Federal Register
Highway 70	California State Highway 70
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
PBFs	physical and biological features
PFMC	Pacific Fishery Management Council
Project	Ballona Creek Trash Interceptor™ Pilot Project
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey



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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Essential Fish Habitat Assessment

1.0 Introduction

## 1.0 INTRODUCTION

This Essential Fish Habitat Assessment (EFHA) was prepared in accordance with legal requirements set forth in Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Publ. L. 104-267), 16 U.S.C. § 1855(b)(2). The purpose of this EFHA is to evaluate the potential effects to essential fish habitat (EFH) that could result from installing the proposed Los Angeles County Public Works (Public Works) Ballona Creek Trash Interceptor™ Pilot Project (Project) in Ballona Creek, an urban river located in Los Angeles County, California. Federally listed anadromous fish species are discussed in this EFHA to facilitate ESA Section 7 consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS or NOAA Fisheries). All other federally listed species are discussed in a separate Biological Assessment. EFH is defined in the MSA as "...those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity" and may include migratory routes, open waters, wetlands, estuarine habitats, artificial reefs, shipwrecks, mangroves, mussel beds, and coral reefs (16 U.S.C. § 1802). The MSA applies to federal actions, including permitting actions, that potentially interfere with any species managed under a federal fishery management plan (FMP), including the proposed action area because there is groundfish EFH within Ballona Creek. This EFHA has been developed to support the federal Rivers and Harbors Act (RHA) permit applications (so-called "Section 10" and "Section 408" permits) for proposed Project work conducted in, on, or over traditionally navigable waterways and across federal flood control facilities (e.g., jetties). The RHA permit applications will be submitted by Public Works to the U.S. Army Corps of Engineers (USACE). USACE is expected to consult with NMFS regarding potential impacts on EFH under the MSA.

### 1.1 PROJECT PURPOSE AND GOAL

On behalf of the Los Angeles County Flood Control District (Flood Control District), Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot Project to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. Construction and installation of the Project would occur over approximately a six-month period.

The purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment.

The floating Interceptor™ would be a single vessel moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties. The placement of floating trash booms (also called "barriers") and the downstream



## **BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**

### Essential Fish Habitat Assessment

#### 1.0 Introduction

current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15).

## **1.2 PROJECT LOCATION/AREA**

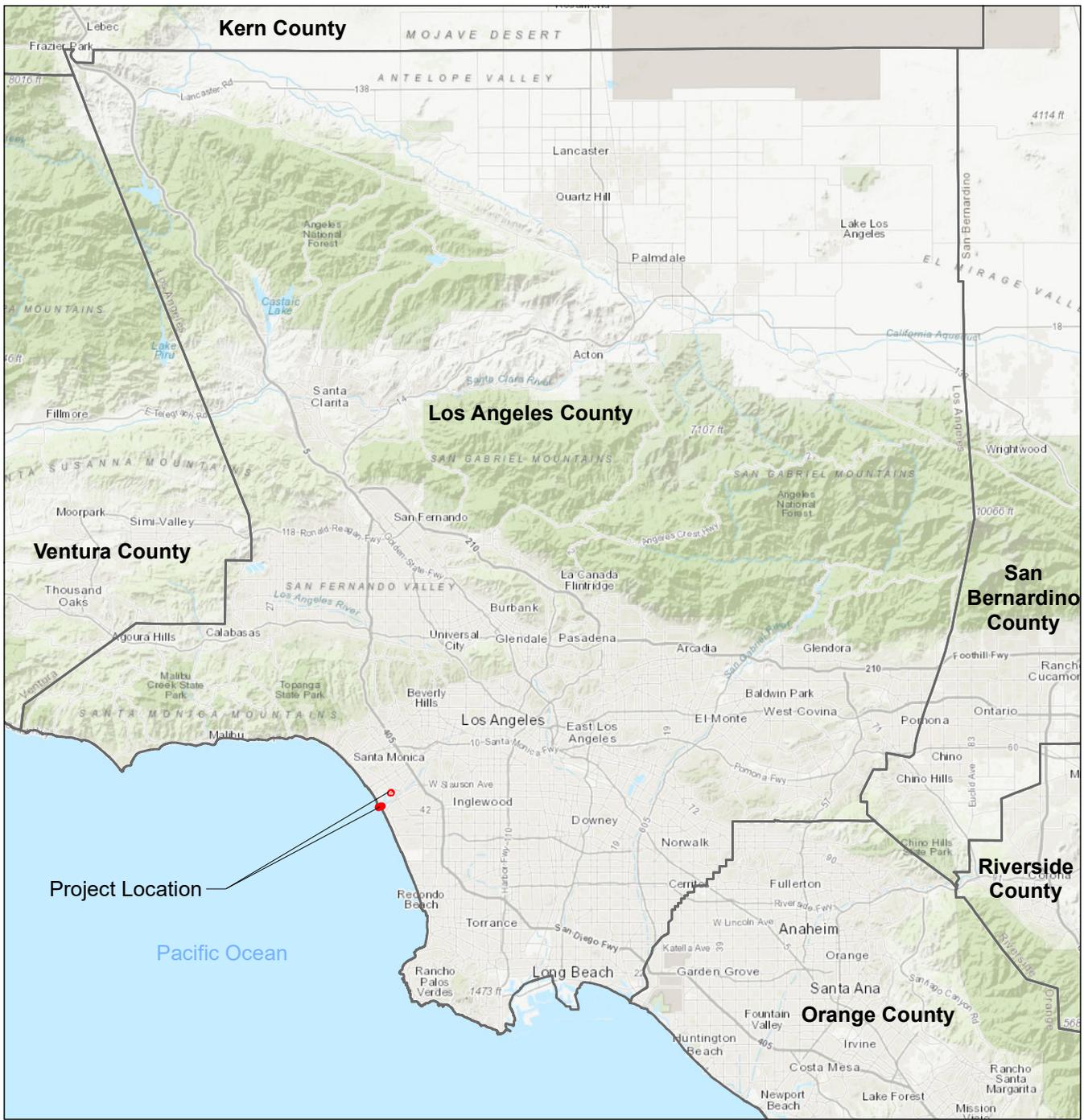
The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of Santa Monica Bay. Figure 1, Project Location Map, shows the general location of the Project. Figure 2, Action Area and Project Design, depicts the limits of Project construction. Construction plans are provided in Appendix B, a photographic log is provided in Appendix C which depicts representative environmental conditions within the Project area, and spec sheets are provided in Appendix D. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project.

The Project site is currently zoned as Open Space (OS-1XL), with a corresponding Open Space general plan land use designation by the City of Los Angeles. As Ballona Creek is an urban, soft bottom flood control channel within the Project site, the Project site is considered urbanized. The Project site is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats coming back to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop.

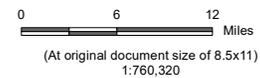
The area surrounding the Project site is predominantly Medium Residential (to the south) and Open Space (to the north). Nearby uses include the Laguna Del Rey multi-family residential complex, Del Rey Lagoon (a lagoon and recreational space), the Ballona Wetlands Ecological Reserve (BWER), University of California Los Angeles Marina Aquatic Center, the Pacific Avenue Bridge, Dockweiler Beach (recreational and public use), and the entrance to the Marina del Rey Harbor. The proposed Project would not be located within the BWER, which is approximately 0.22 mile to the northeast.

The boundary of the proposed Project area was determined from an understanding of proposed Project activities, site geography, topography, hydrology, and an understanding of the distribution, habitat requirements, phenology and vulnerability of EFH potentially occurring in the proposed Project area.





■ Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

*Figure No.*  
**1**

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020.
  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
- Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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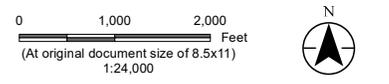
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- Action Area (102.00 Acres)
- Existing Bikeways
- Project Footprint**
- Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
- Mooring Footprint [0.113 Acres]
- Interceptor Assembly Area [0.62 Acres]
- Mooring Construction Staging Areas [0.38 Acres]
- Trash Boom
- Mooring Line

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Interceptor Centroid Coordinates: 33.962071, -118.455715
3. Data Sources: Stantec 2020.
4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



*Project Location* Prepared by DL on 2020-09-23  
 Ballona Creek TR by ST on 2020-09-23  
 Los Angeles County, California IR by CF on 2020-09-23

*Client/Project* 184031268  
 Los Angeles County Public Works

Ballona Creek Trash Interceptor Pilot Project  
 Biological Assessment

*Figure No.*  
**2**

*Title*  
**Action Area and Project Design**

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## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT Essential Fish Habitat Assessment

### 1.0 Introduction

## 1.3 PROJECT CONSTRUCTION ACTIVITIES

Construction of the Interceptor™ and trash boom moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the Project; however, some excavation would be required on top of the existing jetties to expose clean stone to install the moorings. The moorings would be 12 feet wide by 18 feet 4 inches long by 2 to 3 feet deep, with 1 foot of depth being notched into the jetty. Approximately 0.113 acre of developed land would be disturbed or developed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings.

The Project would involve minimal vehicle trips including material import/export as well as haul trucks required for construction.

## 1.4 PROJECT OPERATION AND MAINTENANCE

The Interceptor™ would be positioned within Ballona Creek for the duration of the pilot project. The Interceptor™ is proposed to be operated for a minimum of two years while the Flood Control District and The Ocean Cleanup monitor the effectiveness of the Interceptor™. The effectiveness of the Interceptor™ would be remotely monitored by the Flood Control District and The Ocean Cleanup through monitoring equipment clamped to the Pacific Avenue bridge and digital reports from the Interceptor™ itself. Maintenance is expected to include routine mooring, Interceptor™, trash boom, and monitoring equipment inspections and servicing of mechanical equipment. After the pilot project period, should there be an opportunity to keep the Interceptor™ in place, Public Works will explore future necessary approvals.

## 1.5 PROJECT SCHEDULE

Construction of the Project is pending approval of all applicable permits and is anticipated to be completed within approximately six months.

## 1.6 REGULATORY CONTEXT

### 1.6.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects federally listed threatened and endangered species. Section 7 of the ESA, 16 U.S.C. § 1536(a)(2), requires each federal agency undertaking a federal action to consult with NMFS or the U.S. Fish & Wildlife Service (USFWS), as appropriate, to ensure that any such action is not likely to jeopardize the continued existence of any listed endangered or threatened species or result in destruction or adverse modification of designated critical habitat. In fulfilling these requirements, a federal agency shall use the best scientific and commercial data available. Section 9 of the ESA, 16 U.S.C. § 1538(a), prohibits acts of disturbance that result in the "take" of threatened or endangered species. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Under federal regulations, the term "harass" includes intentional or negligent acts or omissions that creates the likelihood of injury to



## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

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#### 1.0 Introduction

wildlife; the term “harm” includes any act which actually kills or injures individuals of the listed species. 50 C.F.R. § 17.3. Such an act may include significant habitat modification or degradation when it actually kills or injures individuals of the listed species by significantly impairing essential behavioral patterns, including breeding, feeding, sheltering, or migrating. The Project is not anticipated to cause adverse direct or indirect effects on any of the potentially regionally occurring federally listed species or critical habitat as documented in the Biological Resources Technical Report (Appendix A).

#### 1.6.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA establishes procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal FMP. EFH is defined by regulation to refer to “those waters and substrates necessary for the spawning, breeding, feeding, or growth to maturity.” 50 C.F.R. § 600.10. “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle. As noted in Section 1.0, the MSA requires federal agencies to consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that “may adversely affect” EFH. “Adverse effect” means any impact that reduces the quality and/or quantity of EFH and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. A component of this consultation process is the preparation and submittal of an EFHA to assist the federal action agency, here USACE, with the consultation process. In instances where MSA and ESA issues overlap, NMFS encourages an integrated approach for consultation.

#### 1.6.3 Federal Rivers and Harbors Act

Section 14 of the RHA, codified at 33 U.S.C. § 408 (often referred to as “Section 408”), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project. USACE may grant such permission if it determines the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the civil works project. This means USACE has the authority to review, evaluate, and approve all alterations to federally-authorized civil works projects to make sure they are not harmful to the public and still meet the project’s intended purposes mandated by congressional authorization.

Section 10 of the RHA is required for work conducted in, on, or over traditionally navigable waterways. A Section 10 permit is also required for the excavation and dredging or deposition of material, as well as any obstruction or alteration of a navigable water. Work outside the limits of navigable waters may require a Section 10 permit if the structure or work affects the course, location, condition, or capacity of the water body. Navigable waters of the U.S. are those subject to the ebb and flow of the tide shoreward to the mean high-water mark and are used, or have been used in the past, to transport interstate or foreign



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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1.0 Introduction

commerce. 33 C.F.R. § 329.4. This includes coastal and inland waters, lakes, rivers and streams that are navigable, and the territorial seas.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Essential Fish Habitat Assessment

1.0 Introduction

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Essential Fish Habitat Assessment

2.0 Environmental Baseline

## 2.0 ENVIRONMENTAL BASELINE

### 2.1 PHYSICAL AND HABITAT CONDITIONS

The Project area is characterized by Ballona Creek which is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap. Ballona Creek, specifically the reach between Vista del Mar to the Pacific Ocean, was constructed between 1938 and 1939 by the USACE as a flood risk management channel. It flows through the Ballona Wetlands Ecological Reserve (“BWER”), which is located on the coastal plain of the Los Angeles Basin at an elevation of approximately 5 and 28 feet. This basin is dominated by northwest-trending strike-slip faults including the Whittier, Newport-Inglewood, and Palos Verdes Faults. Specifically, within the Los Angeles Basin, the BWER is in a small valley referred to as the Ballona Gap. The Ballona Gap was formed by erosion, repeated sea level fluctuations, and river channel migration. The Los Angeles River flowed through this area, prior to 1825, depositing fluvial sediments (Bilodeau et al. 2007). After a major flood event in 1825, the Los Angeles River shifted southward. The channelized Ballona Creek now follows the former westward river course through the Ballona Gap and the BWER to the Santa Monica Bay.

Los Angeles area includes a Mediterranean climate consisting of mild rainy winters and warm dry summers with inland slopes and basins that have more extreme temperatures and less precipitation (LARWQCB 1994). Prevailing winds from the west and northwest carry moist air from the Pacific Ocean up to 35 miles inland to the San Gabriel Mountains, located northeast of the proposed Project area.

Habitat types of the proposed Project area include aquatic and mudflat habitats, tidal salt marsh, non-tidal wetland, unvegetated salt pan, and brackish marsh habitat; however, there is a lack of such habitats within the proposed Project footprint, with the exception of aquatic habitat (ESA 2017). Stantec and its subcontractor, Merkel and Associates, conducted biological and marine surveys in February, March, and April of 2020 to determine the presence of biological resources in both the terrestrial and aquatic environments within and adjacent to the proposed Project footprint. According to the marine resources survey conducted April 2020, the following marine habitats were present within the survey area: shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt with accumulated shell hash and debris; intertidal riprap revetment and bare rock with algae, barnacles, limpets, and snails; open water/water column habitat; and upland riprap revetment area (Appendix B – Marine Biological Technical Report). Sensitive marine habitats, such as eelgrass and kelp beds, were not observed within the survey area.

### 2.2 HYDROLOGY

The Ballona Creek watershed is located in Los Angeles County and covers an area of approximately 130 square miles and is located within the Los Angeles Basin. The nine-mile-long waterway flows through the City of Los Angeles, Culver City, and unincorporated Los Angeles County before emptying into the Santa



**BALLONA CREEK TRASH INTERCEPTOR TM PILOT PROJECT**  
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## 2.0 Environmental Baseline

Monica Bay between Marina del Rey and Playa del Rey. The principal tributaries are the Benedict Canyon Channel, Sepulveda Channel (also known as Sawtelle-Westwood Channel), and Centinela Creek Channel. Urbanized portions of the watershed drain to Ballona Creek and its tributaries through streets and storm drains (Corps 2010b). Approximately 20% of the watershed upstream from the proposed Project area is undeveloped foothill canyon area and 80% highly urbanized coastal plain, including the densely developed communities of Beverly Hills, Culver City, Hollywood, and a portion of the City of Los Angeles (ESA 2017).

Upstream of the confluence with Centinela Creek, Ballona Creek is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap. Ballona Creek is connected to the BWER through two self-regulated tide (SRT) gates, which limit the high tide levels in the wetland area (that is, they “mute” the tides) (U.S. Environmental Protection Agency 2019).

The mouth of the Ballona Creek empties into the Santa Monica Bay south of Marina del Rey and Venice Beach, and north of Dockweiler Beach. An existing breakwater limits ocean waves from entering both the Marina del Rey entrance and the mouth of Ballona Creek. Ballona Creek parallels the entrance channel to Marina del Rey. Dredging activities in the marina entrance affect the coastal processes near the mouth of Ballona Creek by creating a hole in which sand can be trapped.

**2.3 CONDITIONS OF CONCERN IN PROJECT AREA**

The Ballona Creek Estuary was listed under Section 303(d) of the federal Clean Water Act as an impaired water body for various constituents, including but not limited to: Cadmium, DDT, Zinc, Chlordane, Coliform Bacteria, and Lead (SWRCB 2010). Total Maximum Daily Load (TMDLs) were established to address bacteria, metals, sediment, and trash in Ballona Creek. The USEPA has determined that all wetland habitats within the BWER (including Ballona Creek) are impaired and regarded as “among the most degraded wetlands in California” (USEPA 2012 and Johnston et al. 2015a). The proposed Project area is not designated as a major wildlife movement corridor as identified by the Los Angeles County Department of Regional Planning (2004) or South Coast Wildlands (2008). However, the proposed Project area is identified as groundfish EFH (NMFS 2016).



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3.0 Species of Interest

## 3.0 SPECIES OF INTEREST

### 3.1 ESSENTIAL FISH HABITAT AND SPECIES

The proposed action area is within a Habitat Area of Particular Concern (HAPC), specifically, an estuary under the Pacific Coast Groundfish FMP in this case (NMFS 2020). A HAPC is a subset of EFH; a HAPC designation under the MSA does not confer additional protections or restrictions upon an area beyond EFH status, but such a designation helps to prioritize and focus research and conservation efforts. In Santa Monica Bay, estuarine habitats are present in Marina del Rey, Ballona Creek, and BWER. An estuary is defined as a “small semi-enclosed coastal body of water with a free connection with the open sea within which seawater is measurably diluted by freshwater from land and drainage,” and the dilution of sea water must occur for at least one month of the year to be estuarine (Robbins 2006). This habitat type generally supports EFH and other sensitive species of wildlife. Ballona Creek provides a channel of movement for marine fish species into and out of the proposed Project site, and occasionally supports the limited movement of marine mammals.

Additionally, based on the National Marine Fisheries Service (NMFS) Essential Fish Habitat Mapper tool, no EFH areas protected from fishing were identified at the proposed Project location (NMFS 2020).

#### 3.1.1 Pacific Coastal Pelagic Species

Pacific coastal pelagic EFH species managed by the Pacific Fishery Management Council (PFMC) and known to occur within the general Project area include finfish such as jack mackerel, Pacific (chub) mackerel, Pacific sardine, and northern anchovy (central and northern subpopulation) (NMFS 2020). Coastal pelagic species inhabit the water column from nearshore to open water. Three coastal pelagic species—northern anchovy, Pacific sardine, and Pacific mackerel—have the potential to occur within the general Project area and adjacent aquatic habitats. Their occurrences within the general Project area, should they occur, would be concentrated in the estuarine to marine habitats from Ballona Creek and the BWER to its outlet towards Santa Monica Bay.] Northern anchovy often school near the surface over soft bottoms and sandy beaches, especially in bays and estuaries. Adult Pacific sardines and Pacific mackerel typically reside in midwater, but juvenile mackerel are found along sandy beaches in bays and estuaries (MBC 1994).

#### 3.1.2 Pacific Highly Migratory Species

Pacific highly migratory species managed by the PFMC known to occur within Santa Monica Bay include bigeye thresher shark, bluefin tuna, dolphinfish, pelagic thresher shark, and swordfish; however, these pelagic species typically are present in or around the deeper, open waters of Santa Monica Bay and not in the coastal estuarine habitats proximate to the general Project area (PFMC 2018). Therefore, it is unlikely for these fish species to occur near the Interceptor.



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3.0 Species of Interest

**3.1.3 Pacific Coast Groundfish Species**

Pacific coast groundfish EFH species managed by the PFMC include over 90 species that typically live on or near the bottom of the ocean. The groundfish assemblage offshore of California is diverse and includes rockfish, flatfish, groundfish, sharks, skates, ratfish, scorpionfish, and other species. The overall EFH for adult, juvenile, egg, and larval groundfish is designated as the water column and all bottom habitat extending from the shoreline, meaning the mean high water level (MHWL) or the upriver extent of saltwater intrusion to a depth of 3,500 meters, encompassing the steep drop-offs and high relief habitats that are important for bottom fish. Groundfish occur primarily in higher salinity areas. Species abundance and diversity declines on an upstream, landward gradient as salinity levels decline down the gradient to measure less than 0.5 parts per thousand, restricting the upstream distribution of most Pacific coast groundfish (PFMC 2019).

The EFH species known to occur within the general proposed Project area are listed in Table 1 below.

**Table 1: EFH Fish Species Documented Within the General Proposed Project Area**

Common Name	Species Name	Habitat Comments
<b>PACIFIC COASTAL PELAGIC SPECIES</b>		
jack mackerel	<i>Trachurus symmetricus</i>	Juvenile jack mackerel school over shallow and deep rocky reefs, in kelp beds, and along rocky shorelines. Adults remain offshore.
northern anchovy (northern and central subpopulation)	<i>Engraulis mordax</i>	Northern anchovy school near the surface, over soft bottoms, along open coast sandy beaches, over shallow rocky reefs, and in bays and estuaries. Northern anchovy eats phytoplankton and zooplankton. Anchovy spawn during every month of the year, but spawning increases in late winter and early spring and peaks from February to April. Both eggs and larvae are found near the surface.
Pacific sardine	<i>Sardinops sagax</i>	Pacific sardines school midwater.
Pacific (chub) mackerel	<i>Scomber japonicus</i>	Pacific mackerel migrate inshore from July to November. Adults reside mid-water, while juveniles reside along open coast sandy beaches, in kelp beds, and in bays and estuaries.
<b>PACIFIC HIGHLY MIGRATORY SPECIES</b>		
bigeye thresher shark	<i>Alopias superciliosus</i>	Coastal and oceanic waters in epi- and mesopelagic zones.
bluefin tuna	<i>Thunnus thynnus</i>	Oceanic, epipelagic waters. No regular habitat within the U.S. West Coast, although large fish are occasionally caught in the vicinity of the Channel Islands off Southern California and rarely off the central California coast.
dolphinfish	<i>Coryphaena hippurus</i>	Epipelagic (30 meters deep) and predominantly oceanic waters offshore. Adult common dolphinfish are reportedly mainly piscivorous, with flying fish being the most important in volume and occurrence.
pelagic thresher shark	<i>Alopias pelagicus</i>	Epipelagic and predominantly oceanic waters along coastal California. Known to feed primarily on northern anchovy, Pacific hake, Pacific mackerel and sardine, and invertebrates; and secondarily on a variety of other fishes, squid and pelagic red crab (warm water years).



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## 3.0 Species of Interest

Common Name	Species Name	Habitat Comments
swordfish	<i>Xiphias gladius</i>	Oceanic, epipelagic, and mesopelagic waters. In southern California, swordfish of unspecified size are reported to feed on Pacific hake, northern anchovy, squid, Pacific hake, jack mackerel, and shortbelly rockfish;
<b>PACIFIC GROUND FISH SPECIES</b>		
big skate	<i>Raja binoculata</i>	Commonly found in soft bottom habitats.
black rockfish	<i>Sebastes melanops</i>	Along breakwater, near deep piers and pilings. Associated with kelp, eelgrass, high relief reefs.
blue rockfish	<i>Sebastes mystinus</i>	Blue rockfish release their pelagic larvae between October and March.
bocaccio	<i>Sebastes paucipinis</i>	Juvenile bocaccio reside in shallow waters over soft-bottom near piers and adult bocaccio reside in the water column over hard-bottom and soft-bottom. Bocaccio feed in the offshore pelagic realm. Bocaccio release their larvae between October and July and the larvae remain in bays within 100 ft.
brown rockfish	<i>Sebastes auriculatus</i>	Brown rockfish reside in shallow waters and bays of estuaries in association with soft bottoms, sandrock interfaces, and rocky bottoms of artificial reefs at depths less than 54 meters. Brown rockfish commonly forage in eelgrass and release their pelagic larvae between January and August.
cabezon	<i>Scorpaenichthys marmoratus</i>	Multiple habitat associations but prefers hard substrata and rocky interfaces. Adult cabezon feed in estuaries over sandy bottoms. Both demersal and pelagic eggs are in estuaries from winter to spring.
calico rockfish	<i>Sebastes dalli</i>	Multiple habitat associations but prefers hard substrata and rocky interfaces. Calico rockfish release their pelagic larvae between January and May.
California scorpionfish	<i>Scorpaena guttata</i>	Benthic, on soft and hard bottoms, as well as around structures. Adult California scorpionfish forage in the rocky intertidal and are in tidepools, not sandy bottoms. Eggs are pelagic and float in masses near the surface.
California skate	<i>Raja inornata</i>	Commonly found in soft bottom habitats.
chilipepper	<i>Sebastes goodei</i>	Adults frequent deep rocky reefs as well as sand and mud bottoms; young are pelagic and occur in shallower waters. Chilipepper release their pelagic larvae between August and April.
curlfin sole	<i>Pleuronichthys decurrens</i>	Commonly reside in soft bottom habitats at depths less than 90 meters.
Dover sole	<i>Microstomus pacificus</i>	Adults occur on mud bottom and they move into deep water in winter. Dover sole eggs are in the upper 50 meters of the water column.
English sole	<i>Pleuronectes vetulus</i>	They reside over sand and mud, in eelgrass and along the open coast at depths less than 250 meters. Juvenile English sole forage at the bottom of intertidal zones in shallow bays and estuaries.



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## 3.0 Species of Interest

Common Name	Species Name	Habitat Comments
gopher rockfish	<i>Sebastes carnatus</i>	Commonly found in and around rocky reefs from 10 to 40 meters. Juveniles recruit into the kelp forest canopy and descend to forest floor with growth. Adult and juvenile gopher rockfish feed in the intertidal kelp bed.
grass rockfish	<i>Sebastes rastrelliger</i>	Grass rockfish occupy the rocky intertidal and are common on hard substrate, kelp, and eelgrass. Juveniles recruit to low-growing algae and hard bottoms and reside in tidepools.
Greenblotched rockfish	<i>Sebastes rosenblatti</i>	Greenblotched rockfish are commonly found around rocky structures at depths between 55 meters 490 meters. They feed on fish, shrimp, and squid and have pelagic eggs and larvae, December through July.
Greenspotted rockfish	<i>Sebastes chlorostictus</i>	Commonly resides in a wide variety of habitats including rocky substrata and muddy bottoms at depths between 61 meters and 244 meters. Greenspotted rockfish release pelagic larvae between February and July.
Halfbanded rockfish	<i>Sebastes semicinctus</i>	Halfbanded rockfish are a demersal species found within a wide variety of habitats ranging from muddy floors to hard rockscapes at depths between 15 meters and 402 meters. They feed on zooplankton and release their pelagic larvae from December to April.
kelp greenling	<i>Hexagrammos decagrammus</i>	Juvenile and adult kelp greenling reside on the bottoms of estuaries.
kelp rockfish	<i>Sebastes atrovirens</i>	Common on hard substrate, kelp, and breakwaters. Juvenile kelp rockfish reside in the rocky intertidal and the holdfast region of the kelp from growth to maturity
leopard shark	<i>Triakis semifasciata</i>	Leopard sharks are most common from the surfzone to 5 meters and have multiple habitat associations including soft bottoms, and near structures, kelp, and eelgrass. They enter the intertidal zone during high tides. Leopard sharks pup and mate in the shallow waters near the surfzone in Southern California. Pups reside seasonally along protected beaches and in bays like Santa Monica.
lingcod	<i>Ophiodon elongatus</i>	Adult lingcod reside in estuaries and associate with rocky reefs, kelp beds, and eelgrass. They spawn nearshore and deposit their eggs. Juvenile lingcod remain in shallow bays over soft bottoms and in eelgrass.
olive rockfish	<i>Sebastes serranoides</i>	Olive rockfish are commonly found around hard substrate, kelp, and breakwaters. Juvenile and adult olive rockfish forage in the rocky intertidal but are sometimes present in estuarine waters.
Pacific hake	<i>Merluccius productus</i>	Commonly found offshore and juveniles in open water.
Pacific sanddab	<i>Citharichthys sordidus</i>	Commonly reside on nearshore soft-bottom habitats at depths between 9 and 550 meters.
ratfish	<i>Hydrolagus collieii</i>	Ratfish are a deep-water species found near the bottom in and around rocky areas and over muddy bottoms but reside in shallower waters during the spring and fall. They consume crabs, small benthic fish, shrimps, and worms; and attach their eggs to rocks or place them upright in the sand.
rex sole	<i>Errex zachirus</i>	Commonly found on sandy or muddy bottoms between 61-500 meters.



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### 3.0 Species of Interest

Common Name	Species Name	Habitat Comments
sablefish	<i>Anoplopoma fimbria</i>	Sablefish reside in the pelagic realm or over soft-bottom at depths between 90 and 1460 meters; they are most common between 365 and 550 meters. Between the months of October and February, sablefish spawn at depths greater than 823 meters. Larvae initially inhabit offshore surface waters but move to inshore nursery areas as they get older
sand sole	<i>Psettichthys melanostictus</i>	Juvenile sand sole resides from growth to maturity in estuaries on bottoms of sand, mud, and mixed sand and mud.
spiny dogfish	<i>Triakis semifasciatus</i>	Spiny dogfish are common in estuaries and shallow bays, where adults spawn, and juveniles feed, grow and mature. They are also pelagic.
starry flounder	<i>Platichthys stellatus</i>	Starry flounder spawn in the shallow water of estuaries, where their eggs, larvae, and juveniles remain.
stripetail rockfish	<i>Sebastes saxicola</i>	Juvenile settlement of stripetail rockfish occurs between February and May and they recruit to soft-bottom and kelp beds
vermillion rockfish	<i>Sebastes miniatus</i>	Vermillion rockfish occupy the pelagic habitat over nearshore and neritic soft-bottom and hard-bottom. Juveniles commonly associated with soft bottom and kelp habitats, but adults are commonly associated with rocky interfaces. Juveniles recruit to low relief soft and hard-bottom, moving into deeper water as they grow.

Source: Jones & Stokes 2007; MBC 1994; NMFS 2020; PFMC 2019; PFMC 2018; Robbins 2016; Snow 2020

#### 3.1.4 Sensitive Wildlife

The federally endangered southern California steelhead (*Oncorhynchus mykiss irideus*) and federally threatened green sea turtle (*Chelonia mydas*) have a potential to occur within the vicinity of the proposed Project. Two steelhead were observed upstream of the proposed Project site in Ballona Creek in 2008, but the literature indicates that upstream habitat was not suitable habitat for foraging, spawning, or rearing (USACE 2017). Green sea turtles are known to occur in the warm water discharge of the Haynes Generating Station in Long Beach at the mouth of the San Gabriel River but are rarely sighted in Santa Monica Bay (California Herps 2020). They are unlikely to occur in the proposed Project area due to the lack of habitat and nesting requirements such as warm waters and food sources. Neither species have been observed during surveys conducted within the proposed Project area in February, March, and April of 2020 by Stantec and its subcontractor, Merkel and Associates; it should be noted that focused surveys for fish/turtles were not conducted. However, a review of available data for the general area did not indicate any recent observations of these species in or near the proposed Project area.

Several species of marine mammals protected by the Marine Mammal Protection Act (“MMPA”) have been observed in Ballona Creek, within the proposed Project area, during the surveys referenced above including the California sea lion (*Zalophus californianus*), Pacific harbor seal (*Phoca vitulina richardsi*), and common bottlenose dolphin (*Tursiops truncatus*). During those recent marine and biological surveys, several species of piscivorous birds were also observed, including pelicans, terns, loons, grebes, herons, egrets, cormorants, and mergansers. The observations of these species within the proposed Project area indicates the high potential of locally occurring EFH prey species also occurring within the proposed



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Project area, including Pacific sardine, jack mackerel, northern anchovy, Pacific hake, lingcod, English sole, spiny dogfish, greenstriped rockfish, chilipepper, vermilion rockfish, blue rockfish, bocaccio, stripetail rockfish halfbanded rockfish, olive rockfish, Pacific sanddab, rex sole, Dover sole, and English sole (AMMPA 2011; NOAA 2011; Thomas 2015).

**3.2 CRITICAL HABITAT**

The ESA defines critical habitat as those specific areas within the geographic area occupied by the species, at the time of listing, containing physical and biological features (PBFs) essential to the conservation of the species that may require special management considerations; and occupied areas that are essential to the conservation of the species. Regulations state that the PBFs essential to the conservation of the species include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species. No critical habitat for any fish species is present within the vicinity of the proposed Project (USFWS 2017); steelhead trout is the only Federally listed fish species with some potential to occur, albeit low, within the proposed Project area due to the lack of suitable habitat if it were to occur would likely only be as a transient moving upstream.



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4.0 Potential Impacts

## 4.0 POTENTIAL IMPACTS

Potential impacts to EFH that may occur because of the proposed Project include:

- hazardous materials exposure;
- shading; and
- noise and visual disturbances.

These are further discussed below.

### 4.1 DIRECT AND INDIRECT IMPACTS

#### 4.1.1 Direct Impacts

During construction, installation of the moorings and concrete pads on the existing adjacent jetties may result in the minor release of hazardous materials and minor chemical spills such as oils, grease, gasoline, and similar substances from construction equipment which can result in direct, but minor adverse impacts to fish species and EFH. Although not expected, should any of these activities occur, possible impacts of varying levels of severity may include impaired locomotion, reduced growth, poor reproduction success, genetic damage, tumors and lesions, developmental abnormalities, behavior changes (avoidance), and impairment of olfactory and brain functions (Eisler 2000). The Project would require the use of minimal heavy machinery for a temporary period during construction (i.e., installation of the moorings) along the adjacent jetties (not within Ballona Creek itself). Furthermore, with the implementation of the Los Angeles County Public Works Construction Best Management Practices for spill prevention and control (“WM-4”), which is included in the Los Angeles County Public Works Construction Best management Practices referenced in Section 5.0, the potential for adverse effects to nearby EFH resulting from accidental spills of pollutants (e.g., fuel, oil, grease) would be minimized. Any hazardous materials spilled would be contained and cleaned up immediately under the proposed BMPs, reducing the potential for latent mobilization of materials following construction.

During operations, refuse collected by the Interceptor™ is collected in trash bins on a removable barge which is tugged to the nearby Marina for transfer to shore for disposal. There is a very low chance of a release of hazardous materials and chemical spills (e.g., fuels) in the extremely unlikely event there is a collision with another nearby vessel that results in a breach of a fuel tank. This may result in direct adverse impacts to fish species and EFH. However, the amount of fuel that may be released would be small, the area the barge would be operating within would be small and easily contained, and the likelihood of a collision would be very low in consideration of standard operator training and safety protocols (e.g., radio communication protocols, vessel traffic management, vessel speed limits). F

#### 4.1.2 Indirect Impacts

Potential indirect impacts on EFH as a result of the Project are likely to be associated with noise and shading from operation of the above-water Interceptor™ vessel. With respect to noise, sound pressure



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## 4.0 Potential Impacts

waves within the water can affect fish species that have anatomy affording them greater hearing sensitivity, such as those with swim bladders. The effects on fish from auditory exposure may include mortality from behavioral changes, swim bladder rupture or internal hemorrhaging, and temporary or permanent hearing loss (NMFS 2004).

The mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected for local species. During construction, the Project would only require minimal heavy machinery along the adjacent jetty, not within the Ballona Creek channel. Accordingly, given existing noise and vessel traffic disturbance, a short term installation period, minimal noise associated with the solar-powered operation of the water flow-through system the Project is not expected to create long-term noise disturbance or cause associated harm to EFH.

During operations, there would be very minimal ambient operational noise from the Interceptor™ because it is solar-powered and contains a low-speed conveyor belt. The Interceptor™ is a non-propelled, stationary system that is moored to the jetties in a fixed location. It uses the existing current within Ballona Creek and passive, floating trash booms to concentrate the floating debris towards its extraction equipment. The Interceptor™ itself therefore only moves slightly as a result of waves and currents. During the trash bin disposal and removal process, operators would remove the six dumpsters in the barge from the Interceptor™ and tug the barge to the public boat ramp in the Marina del Rey Harbor, which is currently an active boat harbor and channel with regular noise and watercraft traffic. Any noise generated during removal of the barge and bins during operations would be relatively minimal.

With respect to shading, during operation, waters under the Interceptor™ that were once exposed to sunlight for some portion of the day would be shaded to some degree depending on tide, time of day, and currents. However, based on the findings of the marine surveys completed in April 2020, there are no vegetated areas, such as kelp or eelgrass beds, beneath the proposed location of the Interceptor™, and therefore shading would not have any effects on plant life. The Interceptor™ and its associated passive trash booms will occupy a small contained area that may move slightly with the current. The floating trash booms have a draft of approximately 50 cm below the water surface, which allows water to pass underneath without significant interference. The mooring lines used for the trash booms and the Interceptor itself may sag in the water, but because they are chains are not expected to have any significant impact on flow or light. Therefore, they would not substantially obstruct or divert the natural flow of water within Ballona Creek or affect sun exposure outside of the contained area and limited range.

The Project has been designed to have minimal, if any impacts, to existing habitats and will result in an overall positive environmental benefit to Ballona Creek and by association the Pacific Ocean. Impacts to the land side of the Project will all occur within developed/disturbed habitats with no new habitat impacts. Within Ballona Creek, the placement of the trash interceptor and related trash booms will result in only marginal affects to currents within the channel; the overall net benefit of the Project outweighs the minimal impacts on existing currents.



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5.0 BMPs

## 5.0 BMPS

Construction associated with the Project will be limited to upland construction in an urbanized area, with no in-water construction proposed. With the implementation of Los Angeles County Public Works Construction Best Management Practices during the construction, and other water pollution control measures during the operation of the Project, potential effects on EFH are expected to be negligible.



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5.0 BMPs

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## 6.0 Conclusions

**6.0 CONCLUSIONS**

The Project is not anticipated to cause adverse direct or indirect effects on any of the potentially regionally occurring federally listed species or critical habitat. Direct effects on EFH resulting from proposed Project activities are expected to be negligible during both construction and operations. This is especially the case with the implementation of the additional BMPs set forth in Section 5.0. Indirect effects on EFH during operations would result in limited noise and shading disturbance; however, such effects would not cause long-term harm to EFH or federal threatened or endangered marine species. Therefore, it is determined that the proposed Project may affect, but will not adversely affect or modify EFH.



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## **Appendix A BIOLOGICAL RESOURCES TECHNICAL REPORT**





**Ballona Creek Trash Interceptor™  
Pilot Project**

Biological Resources Technical Report

October 20 2020

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## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

This document entitled Biological Resources Technical Report for the Ballona Creek Trash Interceptor™ Pilot Project was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of The Ocean Cleanup Interceptor B.V. (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT  
BIOLOGICAL RESOURCES TECHNICAL REPORT**

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## Acronyms and Abbreviations

BCWTF	Ballona Creek Watershed Task Force
BGEPA	Bald and Golden Eagle Protection Act
BRTR	Biological Resource Technical Report
BSA	Biological Study Area
BWER	Ballona Wetland Ecological Reserve
CCC	California Coastal Commission
CCH	Consortium of California Herbaria
CCMP	California Coastal Management Program
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCH	Designated Critical Habitat
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FGC	California Fish and Game Code
FMP	Fishery Management Plan
FR	Federal Register
GPS	Global Positioning System
JSA	Jurisdictional Survey Area



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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## Acronyms and Abbreviations

LSAA	Lake or Streambed Alteration Agreement
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MBTA	Migratory Bird Treaty Act
MCVII	second edition of <i>The Manual for California Vegetation</i>
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Ballona Creek Trash Interceptor™ Pilot Project
Public Works	Los Angeles County Public Works
RWQCB	Regional Water Quality Control Board
SEA	Significant Ecological Area
Secretary	Secretary of the Interior
SSC	Species of Special Concern
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WOTS	Waters of the State
WOTUS	Waters of the United States



## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT Biological Resources Technical Report

### 1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) is intended to document the biological resources that are associated with the Ballona Creek Trash Interceptor™ Pilot Project (Project) located in the City of Los Angeles, California (Appendix A, Figure 1). The surveys conducted and the discussions presented in this BRTR are intended to support planning and regulatory agency permitting and associated documentation. Reconnaissance surveys were conducted by Stantec biologists on February 25, 2020, and March 2, 2020, within accessible portions of the Project site and within a surrounding 500-foot buffer zone (approximately 102.0 acres). This approximate 102.0-acre area is defined as the Biological Study Area (BSA) (Appendix A, Figure 2). This BRTR describes the existing environmental conditions that occur within the BSA and surrounding areas and evaluates the potential for biological resources to occur based on those conditions, with a special emphasis on special-status plant and wildlife species, wildlife corridors, and special-status and sensitive natural communities.

### 1.1 PROJECT LOCATION

The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project. A photographic log is provided in Appendix B which depicts representative environmental conditions within the Project area.

The Project site is currently zoned as Open Space (OS-1XL), with a corresponding Open Space general plan land use designation by the City of Los Angeles. As Ballona Creek is an urban, soft bottom flood control channel within the Project site, the Project site is considered urbanized. The Project site is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats coming back to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the Ballona Creek North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop.

The area surrounding the Project site is predominantly zoned Medium Residential (to the south) and Open Space (to the north). Nearby uses include the Laguna Del Rey multi-family residential complex, Del Rey Lagoon (a lagoon and recreational space), the Ballona Wetlands Ecological Reserve (BWER), University of California Los Angeles Marina Aquatic Center, the Pacific Avenue Bridge, Dockweiler Beach (recreational and public use), and the entrance to the Marina del Rey Harbor. The Project would not be located within the BWER, which is approximately 0.22 mile to the northeast.



## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

### Biological Resources Technical Report

#### 1.0 Introduction

## 1.2 PROJECT DESCRIPTION

On behalf of the Los Angeles County Flood Control District (Flood Control District), Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot Project to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. Construction and installation of the Project would occur over approximately a six-month period.

The purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment.

The floating Interceptor™ would be a single vessel moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15). Figure 1 shows the Project Location.

The proposed Project would involve the following primary activities:

- Constructing four Interceptor™ moorings, two trash boom moorings, and handrails on top of the adjacent jetties;
- Assembling the main Interceptor™ components in the parking lot adjacent to the public boat launch in the Marina del Rey harbor;
- Floating the Interceptor™ into position using a support vessel;
- Connecting the Interceptor™ and trash booms to the moorings;
- Attaching and detaching the second trash boom from its mooring as needed;
- Operating the Interceptor™ to collect floating trash from Ballona Creek and containerizing it in dumpsters inside the Interceptor™;
- Transferring the Interceptor™'s full dumpsters to Marina del Rey harbor for off-site disposal of trash at an appropriate solid waste facility;
- Transferring empty trash dumpsters from Marina del Rey harbor to the Interceptor™ in support of continued trash collection;
- Monitoring the effectiveness of the Interceptor™ at removing trash from Ballona Creek; and
- Installing educational signage communicating the Project's purpose/objectives to the public.

Additional information is provided below.



## BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

### Biological Resources Technical Report

#### 1.0 Introduction

##### 1.2.1 Construction of Moorings

The Interceptor™ would be moored to the existing Ballona Creek North and South Jetties above the high water mark and above the mean high tide line of Ballona Creek using four mooring lines to maintain its position. These mooring lines would sag below the water surface using weights to allow boats to travel over them. The two smooth trash booms would be tethered via connection points on the Interceptor™ and two additional mooring points atop the jetties (for a total of six moorings). Each mooring would have a concrete pad which would be installed largely above-grade; minimal excavation to expose clean stone would be required for the moorings to be keyed into the top of the jetties at each location. Ramps with railings would be installed in connection with each mooring. During construction of the moorings on the Ballona Creek North Jetty, the sidewalk on the Ballona Creek North Jetty, between the Pacific Avenue Bridge and the end of the jetty, may need to be closed for public safety. While the Ballona Creek South Jetty does not have a dedicated concrete walkway, it is accessible to the public. Public access to portions of the Ballona Creek South Jetty may need to be blocked during construction of the moorings on the Ballona Creek South Jetty for public safety.

##### 1.2.2 Interceptor™ Assembly

The Interceptor™ would be constructed off-site in the parking lot adjacent to the public boat launch in the Marina del Rey marina harbor.

##### 1.2.3 Trash Boom Operations

The Interceptor™ would use two booms during anticipated high-trash flow events, and one boom in the dry season and when rowers will be expected to need an unrestricted path through the Pilot Project site. The southern boom would stay in place and the northern boom would be clipped and unclipped to the Ballona Creek North Jetty as needed. When not in use, the northern boom would be attached to the north-facing side of the Interceptor™ and “folded” in on itself (Photo 5). This allows the boom to float along the north-facing side of the Interceptor™ without interfering with any components or the operation of the Interceptor™.

##### 1.2.4 Trash Dumpster Removal and Disposal Process

When the Interceptor™ is almost full, it will automatically send a message to the local operators to collect the waste. Operators will then slide the dumpster barge out from the Interceptor™, take it to the Marina del Rey boat harbor, lift and empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpster barge to the Interceptor™.

##### 1.2.5 Installation of Monitoring Equipment and Data Validation

The monitoring system would be attached to the existing Pacific Avenue Bridge which crosses the Ballona Creek channel, approximately one-half-mile upstream from the mouth of Ballona Creek. Manually executed trawling experiments would be executed to calibrate and validate the monitoring system's measurements.



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Resources Technical Report

1.0 Introduction

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Resources Technical Report

## 2.0 METHODOLOGIES

This biological resources assessment of the BSA included, but was not limited to, a literature review, reconnaissance-level survey, non-protocol survey to detect the presence of special-status plant and wildlife species, and a non-protocol avian survey to document the presence of birds, including federal and state threatened or endangered listed species, if present. Stantec Associate Biologist Rocky Brown and Project Biologist Priya Pratap conducted the initial reconnaissance-level surveys on February 25, 2020, and March 2, 2020. Prior to the survey, a preliminary literature review of readily available resources was performed. The survey was conducted on foot within the BSA, where accessible, based on terrain and availability of public access.

### 2.1 LITERATURE REVIEW

A literature search focused on the BSA was conducted prior to the field survey. The BSA is located within the USGS Venice, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted in the BSA and a surrounding 10-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the BSA (CDFW 2020a). The database included portions of the following quadrangles surrounding the BSA:

- Topanga
- Beverly Hills
- Hollywood
- Inglewood
- Redondo Beach
- Torrance

Stantec obtained a list of federally listed species and species that are proposed, or are candidates for federal listing with the potential to occur in the vicinity of the project area, using the Information for Planning and Consultation tool on September 24, 2020 (Consultation Code: 08ECAR00-2020-SLI-1614). Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2020b)
- Special Animals List (CDFW 2020c)
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2020d)
- California Sensitive Natural Communities (CDFW 2020)
- Inventory of Rare and Endangered Vascular Plants of California (CNPS 2020)
- Consortium of California Herbaria (CCH 2020)



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Resources Technical Report

2.0 Methodologies

## 2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENT

### 2.2.1 Site Reconnaissance and Wildlife Surveys

Stantec conducted a habitat assessment and reconnaissance-level surveys to document the environmental conditions present within the BSA. The primary goal of these initial surveys was to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources. Biologists recorded all incidental plant and wildlife observations. However, this assessment did not include focused, protocol-level surveys for rare plants or wildlife or other special-status resources.

The survey was conducted during a season and time of day when resident and migratory birds would be expected to be present and exhibiting normal activity, small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. The survey was conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95 degrees Fahrenheit). The February 25, 2020, survey was conducted during a period of low tide to allow biologists to observe Ballona Creek. The March 2, 2020, survey focused on nesting birds was conducted shortly after sunrise considering most birds are generally active at sunrise.

The BSA was investigated on foot (where accessible) by experienced field biologists walking throughout publicly accessible areas at an average pace of approximately one mile per hour while visually scanning for wildlife and their sign and listening to wildlife songs and calls. Biologists paused as necessary to listen for wildlife or to identify, record, or enumerate any observed species. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Species identifications conform to the most up-to-date field guides and technical literature.

### 2.2.2 Vegetation Mapping

Vegetation descriptions and nomenclature are based on the second edition of *A Manual of California Vegetation* (MCVII) (Sawyer et al. 2009), where applicable, and have been defined to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the ESRI Collector for ArcGIS app on an Apple iPad coupled with a Bad Elf GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ESRI ArcGIS (version 10.7) with aerial photograph base maps with an accuracy of 1 foot. Most boundaries shown on the maps are accurate within approximately 3 feet; however, boundaries between some vegetation types are less precise due to difficulties in interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. All vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to integrate on the landscape, without precise boundaries between



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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## 2.0 Methodologies

them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.

- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.

**2.2.3 Jurisdictional Delineation**

A formal jurisdictional waters delineation per US Army Corps of Engineers (USACE) guidelines was conducted as part of this assessment. The four BSAs were evaluated for potential wetlands and/or waters subject to federal and/or state jurisdiction pursuant to Section 404 and 401 of the Clean Water Act (CWA) concurrently with the field surveys described above. This jurisdictional assessment also included an investigation of areas that could be jurisdictional pursuant to Section 1600 et seq. of the California Fish and Game Code. Prior to conducting the field assessment, Stantec reviewed current and historic aerial imagery, topographic maps, soil maps (USDA, 2020), local and state hydric soils lists, and the National Wetlands Inventory (USFWS, 2020a) to evaluate the potential active channels and wetland features that occur within the BSAs. During the field assessment, hydrologic features were mapped using the same data collection equipment described above for the botanical surveys. Field data were further manipulated in the office using GIS and total jurisdictional area for each regulatory jurisdiction was calculated. The results of the delineation are summarized below in Section 4.4; a stand-alone Preliminary Jurisdictional Wetlands/Waters Delineation Report was also prepared.



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2.0 Methodologies

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## 3.0 REGULATORY ENVIRONMENT

### 3.1 FEDERAL REGULATIONS

#### 3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful “take” and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of Designated Critical Habitat (DCH). Under FESA, take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish and Wildlife Service (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 Code of Federal Regulations [CFR] Section 17.3).

DCH is defined in FESA Section 3(5)(A) as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features: (I) essential to the conservation of the species; (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for DCH must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*.

Activities that may result in “take” of listed species are regulated by USFWS.<sup>1</sup> USFWS produced an updated list of candidate species December 2, 2016 (81 Federal Register [FR] 87246). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

#### 3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code [USC] 703-711) makes it unlawful to possess, buy, sell, purchase, barter or take any migratory bird listed in Title 50 of CFR Part 10. Take is defined as possession or destruction of migratory birds, their nests, and eggs. Disturbances that cause nest abandonment or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. The MBTA encompasses whole birds, parts of birds, bird nests, and eggs.

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<sup>1</sup> The National Marine Fisheries Service (NMFS) regulates threatened and endangered marine species. Marine species were separately surveyed in the attached Marine Biological Technical Study (Appendix C).



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## 3.0 Regulatory Environment

**3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)**

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

USFWS is the primary federal authority charged with the management of golden eagles in the U.S. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this Project. USFWS guidance on the applicability of current BGEPA statutes and mitigation is currently under review. On November 10, 2009, the USFWS updated rules (74 FR 46835) governing the take of golden and bald eagles. The new rules were released under the existing BGEPA, which has been the primary regulatory protection for unlisted eagle populations since 1940.

All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. If a permit is required, due to the current uncertainty on the status of golden eagle populations in the western U.S., it is expected that permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

**3.1.4 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for the conservation and management of the nation’s fishery resources through the preparation and implementation of Fishery Management Plans (FMPs). The Magnuson-Stevens Act calls for the National Marine Fisheries Service (NMFS) to work with regional Fishery Management Councils to develop FMPs for each fishery under their jurisdiction.

One of the required provisions of FMPs specifies that Essential Fish Habitat (EFH) be identified and described for the fishery, adverse fishing impacts on EFH be minimized to the extent practicable, and other actions to conserve and enhance EFH be identified. The act also mandates that NMFS coordinate with and provide information to federal agencies to further the conservation and enhancement of EFH. Federal agencies must consult with NMFS on any action that might adversely affect EFH. When NMFS finds that a federal or state action would adversely affect EFH, it is required to provide conservation recommendations. The Magnuson-Stevens Act applies to the Project since there is groundfish EFH within Ballona Creek. The EFH Assessment Report discusses these issues in more detail.

**3.1.5 Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with NMFS, USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in



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modification of a natural stream or body of water. Federal agencies must consider effects that these projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the Clean Water Act (concerning the discharge of dredged materials into navigable waters of the U.S. [WOTUS]) and Section 10 of the Rivers and Harbors Act (RHA) regarding obstructions in navigable waterways. NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. Since the Project involves impacts to waters of the U.S. and the potential modification of federal jetties, consultation with NMFS, USFWS and CDFW would be required.

#### 3.1.6 Federally Regulated Habitats

Areas that meet the regulatory definition of “waters of the United States” are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972). “Navigable waters of the United States” are subject to jurisdiction under Section 10 of the RHA (1899). WOTUS may include all waters used or potentially used for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as WOTUS, tributaries of waters otherwise defined as WOTUS, territorial seas, and wetlands (i.e., “Special Aquatic Sites”) adjacent to WOTUS (33 CFR, Section 328.3).

Construction activities within WOTUS are regulated by USACE. For example, the placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of State Water Quality Certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources.

#### 3.1.7 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires all federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA into other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision-making. NEPA requires federal agencies to review and comment on federal agency environmental plans and documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 USC 4321- 4327; 40 CFR 1500-1508).

#### 3.1.8 Rivers and Harbors Act of 1899

##### 3.1.8.1 Section 14

Section 14 of the RHA, codified at 33 U.S.C. § 408 (often referred to as “Section 408”), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters,



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improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project. USACE may grant such permission if it determines the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the civil works project. This means USACE has the authority to review, evaluate, and approve all alterations to federally-authorized civil works projects to make sure they are not harmful to the public and still meet the project's intended purposes mandated by congressional authorization.

The jetties currently bordering Ballona Creek are part of the Project and changes to them would require a Section 408 permit from the USACE prior to modification.

**3.1.8.2 Section 10**

Section 10 of the RHA is required for work conducted in, on, or over traditionally navigable waterways. A Section 10 permit is also required for the excavation and dredging or deposition of material, as well as any obstruction or alteration of a navigable water. Work outside the limits of navigable waters may require a Section 10 permit if the structure or work affects the course, location, condition, or capacity of the water body. Navigable waters of the U.S. are those subject to the ebb and flow of the tide shoreward to the mean high water mark and are used, or have been used in the past, to transport interstate or foreign commerce. 33 C.F.R. § 329.4. This includes coastal and inland waters, lakes, rivers and streams that are navigable, and the territorial seas.

The BSA contains potential navigable WOTUS subject to USACE jurisdiction under Section 10 of the RHA, as discussed in a separate Preliminary Jurisdictional Delineation Report.

**3.1.9 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) establishes national policy to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation's coastal zones. In accordance with Section 307(c) of the CZMA, after approval by the Secretary of Commerce of a state's management program, any applicant for a required federal license or permit to conduct an activity in or outside of the coastal zone affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program. The federal government certified the California Coastal Management Program (CCMP) in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976. All consistency documents are reviewed for consistency with these policies.

For all of the California coast except San Francisco Bay the state agency responsible for implementing the CZMA is the California Coastal Commission (CCC). The CCC is responsible for reviewing proposed federal and federally licensed or permitted activities to assess their consistency with the approved CCMP.



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**3.2 STATE REGULATIONS****3.2.1 California Environmental Quality Act**

The California Environmental Quality Act (CEQA) establishes state policy to prevent significant and avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the CEQA Guidelines published by the California Natural Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

**3.2.2 California Endangered Species Act**

Provisions of the California Endangered Species Act protect state-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of take under the California Fish and Game Code (FGC). Additionally, the FGC contains lists of vertebrate species designated as “fully protected” (FGC Sections 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern (SSC) to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. SSC may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the FGC. FGC Section 3503.5 states that it is “unlawful to ‘take’, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to ‘take’, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Under Sections 3503 and 3503.5 of the FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited.

**3.2.3 Section 1602 of the California Fish and Game Code**

Section 1602 of the FGC requires any person, state or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. This



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includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW would determine whether the proposed project may impact fish or wildlife resources.

If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be required. A completed CEQA document must be submitted to CDFW before an LSAA would be issued. The Project area falls within the South Coast Region of the CDFW; however, it is not anticipated to substantially divert or obstruct the natural flow of Ballona Creek, nor to substantially change the channel or streambed of the Creek.

**3.2.4 Porter-Cologne Water Quality Control Act**

California Regional Water Quality Control Boards (RWQCBs) regulate the “discharge of waste” to “waters of the state” (WOTS). All projects proposing to discharge waste that could affect WOTS must file a Waste Discharge Report with the appropriate RWQCB. The board responds to the report by issuing Waste Discharge Requirements or by waiving them for that project discharge. Both terms “discharge of waste” and WOTS are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered WOTUS, as defined by Section 404 of the CWA, are addressed under the Porter Cologne Water Quality Control Act. The Project area falls under the jurisdiction of the Region 4 – Los Angeles RWQCB.

**3.2.5 State-Regulated Habitats**

The California State Water Resources Control Board is the state agency (together with the RWQCBs) charged with implementing water quality certification in California. See section 3.1.6 above.

**3.2.6 Native Plant Protection Act**

Under FGC Sections 1900 to 1913, the Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. A Project applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of the NPPA and sections of CEQA that apply to rare or endangered plants.

**3.2.7 California Coastal Commission and Coastal Act of 1976**

The CCC has planning, regulatory, and permitting responsibilities in partnership with local governments over all development taking place within the coastal zone, a 1.5 million-acre area stretching 1,100 miles along the state's coastline from Oregon to Mexico (and around nine offshore islands). The coastal zone



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extends seaward 3 miles, while its landward boundary varies from several miles inland in places such as the Eel River and the Elkhorn Slough, to as close as a few hundred feet from the shore in other areas.

The CCC's enabling legislation, the Coastal Act of 1976, created a comprehensive coastal protection program grounded in partnerships between CCC and local government jurisdictions (15 counties and 60 cities) within the coastal zone. Among the coastal resources specifically protected within the Coastal Act are public access to the coastline, wetlands and other environmentally sensitive habitat areas, agriculture, low-cost visitor-serving recreational uses, visual resources, commercial and recreational fishing, and community character. Coastal streams and wetlands are also protected under the Coastal Act.

The Coastal Act Section 30231 defines a wetland as:

*...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*

The CCC's regulations (CCR Title 14) establishes a "one parameter definition," which requires evidence of a single parameter to establish wetland conditions:

*Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. (14 CCR Section 13577).*

The "one parameter" definition adopted by the Coastal Commission is based on the general definition used by USFWS and CDFW from the USFWS wetlands classification system first published in 1979 (Cowardin et al. 1979):

*Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.*

The Coastal Act definition of a wetland does not distinguish between wetlands based on their quality. Therefore, under the Coastal Act, poorly functioning or degraded areas that meet the definition of wetlands are subject to wetland protection policies.



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### 3.3 LOCAL REGULATIONS

#### 3.3.1 Los Angeles County General Plan – Chapter 9, Conservation and Natural Resources Element

##### 3.3.1.1 Open Space Resources Component

The Open Space Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and programs that are designed to preserve and manage dedicated open space areas through preservation, acquisition, and easements.

The Goals and Policies relative to natural resources that apply to the BSA are as follows:

**Goal 1:** *Open space areas that meet the diverse needs of Los Angeles County*

- **Policy 1.2:** *Protect and conserve natural resources, natural areas, and available open spaces*
- **Policy 1.5:** *Provide and improve access to dedicated open space and natural areas for all users that considers sensitive biological resources*

##### 3.3.1.2 Biological Resources Component

The Biological Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and practices which are designed to preserve biotic diversity, monitor Significant Ecological Areas (SEAs), and coordinate environmental protection.

The Goals and Policies relative to biological resources that apply to the BSA are as follows:

**Goal 3:** *Permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands, alpine habitat, chaparral, shrublands, and SEAs.*

- **Policy 3.1:** *Conserve and enhance the ecological function of diverse natural habitats and biological resources*
- **Policy 3.3:** *Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function- acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.*
- **Policy 3.6:** *Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.*
- **Policy 3.7:** *Participate in inter-jurisdictional collaborative strategies that protect biological resources.*



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- **Policy 3.11:** *Discourage development in riparian habitats, streambeds, wetlands, and other native woodlands in order to maintain and support their preservation in a natural state, unaltered by grading, fill, or diversion activities.*

#### 3.3.1.3 Local Water Resources Component

The Local Water Resources Component of the Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies and practices that are designed to effectively manage and preserve invaluable local water resources.

The Goals and Policies relative to local water resources that apply to the BSA are as follows:

**Goal 5:** *Protected and useable local surface water resources.*

- **Policy 5.1:** *Support the LID philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distributions of naturalistic BMPs at regional, neighborhood, and parcel-level scales.*
- **Policy 5.4:** *Actively engage in implementing all approved Enhanced Watershed Management Programs/Watershed Management Programs and Coordinated Integrated Monitoring Programs/ Integrated Monitoring Programs or other County-involved TMDL implementation and monitoring plans.*
- **Policy 5.6:** *Minimize point and non-point source water pollution.*
- **Policy 5.7:** *Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals.*

#### 3.3.1.4 Significant Ecological Area Program

Significant Ecological Areas are officially designated areas within LA County with irreplaceable biological resources. The SEA Program objective is to conserve genetic and physical diversity within Los Angeles County by designating biological resource areas that are capable of sustaining themselves into the future. The SEA Program establishes the permitting, design standards, and review process for development within SEAs, balancing preservation of the county's natural biodiversity with private property rights (Los Angeles County 2019). The BSA does not occur within a SEA, but the BWER extends approximately two miles east-northeast of the BSA.

### 3.3.2 Los Angeles County Public Works Ballona Creek Watershed Management Plan

The Ballona Creek Watershed Management Plan was created by the LACPW to “set forth pollution control and habitat restoration actions to achieve ecological health.”

The Ballona Creek Watershed Task Force adopted the following goals:



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- Improve quality of surface water and groundwater
- Maintain flood protection
- Restore hydrologic function to Ballona Creek and tributaries where feasible
- Optimize water resources to reduce dependence on imported water
- Improve aquatic, estuarine, and riparian habitat quality and quantity
- Improve habitat quality, quantity, and connectivity
- Practice stewardship of the landscape

As previously stated in Section 1.2, the purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment. The Project supports the goals of the Ballona Creek Watershed Management Plan to improve quality of surface water and improve aquatic and estuarine habitat quality and quantity.

**3.3.3 City of Los Angeles General Plan**

The City of Los Angeles General Plan provides a comprehensive long-range view of the city and includes a Land Use Element that is made up of 35 community plans and 10 technical elements. The pertinent technical elements include a Conservation Element and an Open Space Element.

**3.3.3.1 Conservation Element**

The Conservation Element primarily addresses preservation, conservation, protection, and enhancement of the City's natural resources. The natural resources or processes that should be or are subject to preservation, conservation, protection, and enhancement efforts include endangered species such as the Belding's savannah sparrow, which lives within the Project site; erosion, including beach erosion; fisheries; habitats, including coastal wetlands; and open space and parks. In addition, the Conservation Element identifies applicable regulations and the Conservation Element policies with regard to each type of resource.

**3.3.3.2 Open Space Element**

The Open Space Element consists of an Open Space Plan that serves to guide the identification, preservation, conservation, and acquisition of open space within the City of Los Angeles. The Open Space Plan was adopted in 1973; an update is pending. The Del Rey Lagoon portion of the BSA supports several of the characteristics used to define "Open Space" in the Open Space Element of the City's General Plan. Specifically, they provide "opportunities for recreation and education" and conserve or preserve "natural resources or ecologically important areas."



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**3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS****3.4.1 California Native Plant Society Rare Plant Program**

The mission of the California Native Plant Society (CNPS) Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) is entered into the online CNPS Rare Plant Inventory and given a California Rare Plant Rank (CRPR). The Rare Plant Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under state endangered species legislation, are defined by the following CRPRs:

- CRPR 1A: Plants considered by the CNPS to be extinct in California
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3: Plants about which we need more information – a review list
- CRPR 4: Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 0.1 to 0.3 ranking, with 0.1 being the most endangered and 0.3 being the least endangered and are described as follows:

- 0.1: Seriously threatened in California (high degree/immediacy of threat)
- 0.2: Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3: Not very threatened in California (low degree or immediacy of threats or no current threats known)



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## 4.0 EXISTING CONDITIONS

### 4.1 SETTING

As depicted in Figures 1 and 2 in Appendix A, the BSA is located at the confluence of Ballona Creek and Santa Monica Bay. In general, the BSA is characterized by Ballona Creek, which is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap. The mouth of Ballona Creek empties into the Santa Monica Bay south of Marina del Rey and Venice Beach, and north of the community of Playa del Rey and Dockweiler Beach. The channel mouth is approximately 295 feet wide. The elevation of the channel’s bottom at the Project site ranges from -2.2 to +7.8 feet with respect to mean sea level.

The Ballona Creek watershed covers approximately 130 square miles within the Los Angeles Basin. With headwaters in the Santa Monica Mountains, the principal tributaries to the Ballona Creek are the Benedict Canyon Channel, Sepulveda Creek Channel, Centinela Creek Channel, and immense system of underground storm drains (ESA, 2017). Ballona Creek flows through the Ballona Wetlands Ecological Reserve within the coastal plain of the Los Angeles Basin at an elevation of approximately 5 to 28 feet (USACE, 1999). The reach of the Ballona Creek has a design flow rate of 46,000 cubic feet per second. The watershed upstream of the SA is approximately 20 percent undeveloped foothill and canyon area and 80 percent highly urbanized coastal plain, including the densely developed communities of Beverly Hills, Culver City, Hollywood, and a portion of the City of Los Angeles (USACE, 1999). The flood risk management channel provides support for approximately 1.5 million residents of the listed cities.

The BSA is situated within the unincorporated communities of Marina del Rey and Playa del Rey, within the City of Los Angeles. It encompasses the northernmost portion of the Del Rey Lagoon and Dockweiler State Beach, the Ballona Creek Bridge, multi-unit residential buildings, and a southern section of the Marina del Rey South Jetty and Marina del Rey Main Channel. The land within the BSA is nearly completely developed with urban infrastructure and open space with recreational and public use facilities or consists of open water. Nearby uses include a functioning small-craft harbor with boat slips, multi-unit residential buildings, single-family homes, Del Rey Lagoon; the BWER, Ballona Creek Bridge, and the University of California Los Angeles Marina Aquatic Center. Open space to the north, east, and south of the BSA includes Dockweiler State Beach, Venice City Beach, Del Rey Lagoon, and the BWER. A photographic log for the survey is included in Appendix B and depicts representative environmental conditions within the BSA and surrounding areas.

### 4.2 VEGETATION AND LAND COVERS

As defined in MCVII, a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition,



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and reflects the effects of local climate, soil, water, disturbance, and other environmental factors” (Sawyer et al. 2009). Generally, Stantec’s mapping and description of plant communities follows the classification system described in the MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, no native habitat occurs within the BSA. Therefore, the vegetation community land cover types discussed below are descriptive in nature and are not specifically referenced in the MCVII. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

Recent technical studies for biological resources, specifically vegetation mapping, have been conducted in support of the Ballona Wetlands Restoration Project currently proposed by CDFW. The extent of these surveys overlap with portions of the BSA. The Draft EIR prepared for the Ballona Wetlands Restoration Project (ESA 2017) was used to define some of the vegetation classifications that occur within the BSA that are not defined in MCVII. These classifications are described below and depicted in Figure 2 (Appendix A).

Habitats observed within the BSA during the field survey, where vegetated, were comprised primarily of common plant species and vegetation communities found in the coastal areas of southern California. Habitat conditions within the vegetated portions of the BSA were noted to be of generally good quality, with well-established communities comprised of native and non-native shrub and herbaceous species. Within the BSA, Stantec biologists mapped one plant community defined by Sawyer et al. (2009), one plant community defined by the Ballona Wetlands Restoration Project Draft EIR (ESA 2017), and three land cover types. These are described below, summarized in Table 1, and depicted in Figure 2 included in Appendix A. Small, localized areas occupied by other plant communities were also observed within the BSA; however, the areas were less than the minimum mapping unit dictated by the size of the survey area and thus, were not mapped.

**Table 1: Vegetation Communities and Land Cover Types Occurring within the Biological Study Area and Impacts**

<b>Vegetation Community/Land Cover Type</b>	<b>Acreage within BSA</b>	<b>Acreage of Permanent Project Impacts</b>	<b>Acreage of Temporary Project Impacts</b>
Invasive Monoculture	2.76	-	-
Pickleweed Mats Alliance	0.24	-	-
Ice Plant Mats Alliance	0.46	-	-
Dune Mat Alliance	0.41	-	-
Open Water	55.96	-	-
Sandy Beach	7.30	-	-
Disturbed and Developed	34.88	0.14	-
<b>Total</b>	<b>102.00</b>	<b>0.14</b>	-



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**4.2.1 Vegetation Communities and Land Cover Types**

**4.2.1.1 Vegetation Communities**

**Invasive Monoculture**

Approximately 2.76 acres of this community occurs within the BSA, in the upland area of Ballona Creek and along the Del Rey Lagoon. In the Draft Environmental Impact Report for the Ballona Wetlands Restoration Project, invasive monoculture is described as follows:

*...monocultures or very low-diversity assemblages of invasive herbs and shrubs including black mustard (*Brassica nigra*), crown daisy (*Glebionis coronaria*), wild radish (*Raphanus sativus*) ... pampas grass (*Cortaderia* spp.), carnation spurge (*Euphorbia terracina*), and castor bean (*Ricinus communis*). In addition, small, fragmented groups of non-native trees, primarily thorn tree and lollypop tree (*Myoporum laetum*), are included in this habitat type. Invasive monocultures are common across the BWER within many upland habitat types. However, they are most often located in areas with introduced fill (e.g., berms or upland fill areas). (ESA 2017)*

Within the BSA, plant species observed within this community included black mustard, crown daisy, radish, pampas grass, and carnation spurge. Small Philippine acacia (*Acacia confusa*), Brazilian peppertree (*Schinus terebinthifolia*), tree tobacco (*Nicotiana glauca*), sweet alyssum (*Lobularia maritima*), ribwort plantain (*Plantago lanceolata*), broadleaf plantain (*Plantago major*), shortpod mustard (*Hirschfeldia incana*), common sowthistle (*Sonchus oleraceus*), barley (*Hordeum* sp.), Bermuda buttercup (*Oxalis pes-caprae*), and wild fennel (*Foeniculum vulgare*) were also observed within this community.

**4.2.1.2 Pickleweed Mats Alliance**

Approximately 0.24 acre of this vegetation community occurs within the BSA, primarily along the margins of the Del Rey Lagoon and banks of Ballona Creek. This alliance is represented within the BSA by Pacific pickleweed (*Salicornia pacifica*) as the dominant species in the subshrub and herbaceous layers with algae and interspersed with ice plant (*Carpobrotus edulis*). This alliance is generally found to occur in coastal salt marshes and alkaline flats.

**4.2.1.3 Ice Plant Mats Alliance (*Mesembryanthemum* spp. - *Carpobrotus* spp. Herbaceous Semi-Natural Alliance)**

Approximately 0.46 acre of this vegetation community occurs within the BSA along the margins of Del Rey Lagoon, the southern bank of Ballona Creek, and along the coastal sand dunes immediately south of the creek bordering a residential community. Within the BSA, the alliance is represented by continuous stands of Chilean sea fig (*Carpobrotus chilensis*) and ice plant (*Carpobrotus edulis*) as the dominant species in the herbaceous layers. It is interspersed with occurrences of beach suncup (*Camissoniopsis cheiranthifolia*), European searocket (*Cakile maritima*), tree aeonium (*Aeonium arboreum*), cheeseweed mallow (*Malva parviflora*), and jade plant (*Crassula ovata*). This alliance is generally found to occur in bluffs, disturbed, land, and sand dunes of immediate coastlines.



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##### **4.2.1.4 Dune Mat Alliance (*Abronia latifolia* - *Ambrosia chamissonis* Herbaceous Alliance)**

Approximately 0.41 acre of this vegetation community occurs within the BSA. It primarily occurs along the margins of Dockweiler State Beach and the jetty within the outer rocky outcrops of Ballona Creek and the sandy beach surfaces immediately south of the creek. Within the BSA, this alliance is represented by silver burr ragweed (*Ambrosia chamissonis*) and European searocket (*Cakile maritima*) as the dominant species. Lesser sea-spurry (*Spergularia marina*), common stork's-bill (*Erodium cicutarium*), prostrate knotweed (*Polygonum aviculare*), and rigput brome (*Bromus diandrus*) are interspersed throughout this community. This alliance is generally found to occur in sand dunes of coastal bars, river mouths, and spits along the immediate coastline with coarse to fine-textured sands.

##### **4.2.1.5 Other Land Cover Types**

###### **Open Water**

Approximately 55.96 acres of open water habitat occurs in the Ballona Creek channel, Marina del Rey Harbor Main Channel, and Del Rey Lagoon within the BSA. The Ballona Creek channel within the BSA is a concrete and riprap channelized system with a soft sediment bottom. The Main Channel supports the passage of small and large watercrafts through the harbor. Del Rey Lagoon, a small coastal saline pond separated from Ballona Creek by a 40-foot-wide levee, has a manually controlled tidal gate, which exists at the north end of the lagoon and connects to a tidally influenced portion of Ballona Creek that enables periodic water exchange (MBC et al. 2016). The open water habitat is generally unvegetated, although a narrow fringe of herbaceous vegetation is occasionally present along the banks of Ballona Creek exposed during low tide.

###### **Sandy Beach**

Approximately 7.30 acres of the BSA includes a portion of the northern section of Dockweiler State Beach. This area is heavily disturbed and used as a recreational space, including a paved bicycle path that intersects the beach. The area is dominated by fine sands and is generally unvegetated due to the level of disturbance and its associated recreational and public use facilities.

###### **Disturbed and Developed**

This land cover type was used to map approximately 34.88 acres of the BSA that are developed, including multi-unit residential buildings, paved and unpaved roadways and paths, a pedestrian bridge, the Ballona Creek North and South Jetties, landscaped areas, and developed recreational spaces. In general, these areas are unvegetated or contain ornamental vegetation, such as the areas surrounding Del Rey Lagoon and residential landscaped areas. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil. These include non-native grasses and forbs such as soft brome (*Bromus hordeaceus*), rigput brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), and bristly oxtongue (*Helminthotheca echioides*).



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**4.2.2 Common Plant Species Observed**

Plants observed during the February and March 2020 reconnaissance-level surveys were recorded; however, a focused, floristic-level survey was not conducted. The reconnaissance-level surveys resulted in the documentation of 79 species of native and non-native plants within the BSA, a detailed list of which is provided in Table 2.

**Table 2: Plant Species Observed in the Biological Study Area**

Scientific Name	Common Name
<i>Acacia confusa</i> *	small Philippine acacia
<i>Achillea millefolium</i>	common yarrow
<i>Aeonium arboreum</i> *	tree aeonium
<i>Agapanthus praecox</i> *	lily of the Nile
<i>Agave attenuata</i> *	lion's tail
<i>Ageratina altissima</i> *	white snakeroot
<i>Aloe arborescens</i> *	candelabra aloe
<i>Ambrosia chamissonis</i>	silver burr ragweed
<i>Archontophoenix cunninghamiana</i> *	king palm
<i>Artemisia californica</i>	California sagebrush
<i>Asparagus aethiopicus</i> *	asparagus fern
<i>Atriplex lentiformis</i>	big saltbush
<i>Baccharis pilularis</i>	coyote brush
<i>Bellis perennis</i> *	common daisy
<i>Bougainvillea glabra</i> *	paper flower
<i>Brassica nigra</i> *	black mustard
<i>Bromus diandrus</i> *	ripgut brome
<i>Bromus hordeaceus</i> *	soft brome
<i>Cakile maritima</i> *	European searocket
<i>Camissoniopsis cheiranthifolia</i>	beach suncup
<i>Capsella bursa-pastoris</i> *	shepherd's purse
<i>Carissa macrocarpa</i> *	natal plum
<i>Carpobrotus chilensis</i> *	Chilean sea fig
<i>Carpobrotus edulis</i> *	ice plant
<i>Chenopodium murale</i> *	nettle-leaved goosefoot
<i>Claytonia sibirica</i> *	pink purslane
<i>Cleomella arborea</i> *	bladderpod
<i>Commelina benghalensis</i> *	Benghal dayflower



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Scientific Name	Common Name
<i>Cortaderia selloana</i> *	pampas grass
<i>Crassula ovata</i> *	jade plant
<i>Croton californicus</i>	California croton
<i>Curio repens</i> *	blue chalksticks
<i>Cynodon dactylon</i> *	Bermuda grass
<i>Datura stramonium</i> *	jimson weed
<i>Encelia californica</i>	California brittlebush
<i>Erodium cicutarium</i> *	common stork's-bill
<i>Eschscholzia californica</i>	California poppy
<i>Euphorbia terracina</i> *	Geraldton carnation spurge
<i>Ficus microcarpa</i> *	curtain fig
<i>Foeniculum vulgare</i> *	wild fennel
<i>Glebionis coronaria</i> *	crown daisy
<i>Helminthotheca echioides</i> *	bristly oxtongue
<i>Heterotheca grandiflora</i>	telegraphweed
<i>Hirschfeldia incana</i> *	shortpod mustard
<i>Hordeum</i> sp.	barley
<i>Isocoma menziesii</i>	Menzie's goldenbush
<i>Juniperus horizontalis</i> *	creeping juniper
<i>Lantana camara</i> *	common lantana
<i>Lampranthus spectabilis</i> *	trailing iceplant
<i>Lobularia maritima</i> *	sweet alyssum
<i>Lotus scoparius</i>	common deerweed
<i>Malva parviflora</i> *	cheeseweed
<i>Melilotus indicus</i> *	annual yellow sweetclover
<i>Nicotiana glauca</i> *	tree tobacco
<i>Oxalis stricta</i>	common yellow oxalis
<i>Oxalis pes-caprae</i> *	Bermuda buttercup
<i>Phoenix canariensis</i> *	Canary Island date palm
<i>Phormium tenax</i> *	New Zealand flax
<i>Pittosporum</i> sp.	cheesewood
<i>Plantago lanceolata</i> *	ribwort plantain
<i>Plantago major</i> *	broadleaf plantain
<i>Platyclusus orientalis</i> *	Oriental arborvitae



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Scientific Name	Common Name
<i>Polygonum aviculare</i> *	prostrate knotweed
<i>Prunus persica</i> *	peach
<i>Pseudognaphalium californicum</i>	California rabbit tobacco
<i>Raphanus sativus</i> *	cultivated radish
<i>Rhaphiolepis indica</i> *	Indian hawthorn
<i>Salicornia pacifica</i> *	Pacific pickleweed
<i>Salvia leucantha</i> *	Mexican bush sage
<i>Schiuus terebinthifolia</i> *	Brazilian peppertree
<i>Sedum dendroideum</i> *	tree stonecrop
<i>Soliva sessilis</i> *	field burweed
<i>Sonchus oleraceus</i> *	common sow thistle
<i>Spergularia marina</i>	lesser sea spurry
<i>Strelitzia reginae</i> *	bird of paradise
<i>Syagrus romanzoffiana</i> *	queen palm
<i>Taraxcum</i> sp.	dandelion
<i>Trifolium repens</i> *	white clover
<i>Washington robusta</i> *	Mexican fan palm

\* Non-native Species

### 4.3 COMMON WILDLIFE

This section describes the common wildlife observed during the reconnaissance survey and those species expected to occur within the BSA based on habitat characteristics and species known to occur in the region.

#### 4.3.1 Terrestrial Invertebrates

As in all ecological systems, invertebrates inhabiting the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food sources for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. Though heavily urbanized, habitat conditions within the BSA provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates that are known to adapt to such disturbance. A focused insect survey was not performed within the BSA for this Project; however, a variety of common insects were observed during the reconnaissance survey, including species from the following orders: Araneidae (spiders), Coleoptera (beetles), Diptera (flies and mosquitoes), Lepidoptera (moths and butterflies), Odonata (dragonflies and damselflies), Hemiptera (true bugs), and Hymenoptera (wasps, bees and ants).



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##### 4.3.2 Fish

Recent surveys conducted along the lower reaches of Ballona Creek as part of baseline studies for the Ballona Wetlands Restoration Project (Johnston et al. 2012) identified several fish species that would be expected to occur within the BSA. The most common fish observed was California halibut (*Paralichthys californicus*). Other species observed included California lizardfish (*Synodus lucioceps*), kelp bass (*Paralabrax clathratus*), giant kelpfish (*Heterostichus rostratus*), diamond turbot (*Hypsopsetta guttulata*), striped mullet (*Mugil cephalus*), California killifish (*Fundulus parvipinnis*), and topsmelt (*Atherinops affinis*). Two southern California steelhead (*Oncorhynchus mykiss irideus*) individuals were observed in Ballona Creek (upstream of the Ballona Reserve) in 2008 (Johnston et al. 2011); the BSA and upstream areas do not support suitable spawning habitat. EFH is mapped within the BSA for several fish species and is discussed further in an EFH report.

##### 4.3.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), which is generally not present within the BSA, could provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Aubry et al. 1988; Maser and Trappe 1984).

Amphibian species were not observed during the reconnaissance surveys within the BSA. Species not observed in the BSA but known to occur in the area, particularly within the BWER, include the Baja California treefrog (*Pseudacris hypochondriaca*), garden slender salamander (*Batrachoseps major*), common slider (*Trachemys scripta*), and the non-native American bullfrog (*Lithobates catesbeiana*). Based on the tidal influence within the BSA, amphibians would not be expected to be permanent residents in this section of Ballona Creek, though there is a low possibility that they may be present as transients associated with storm drains entering the creek within the BSA.

##### 4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrates, soil types, and presence of refugia such as rock piles, boulders, and native debris. Many reptile species, even if present, are difficult to detect because they are cryptic and their behavioral characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most species take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation, where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Weather conditions during the survey were favorable for reptile activity.



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The only reptiles observed during the site reconnaissance were western fence lizards (*Sceloporus occidentalis*) and a side-blotched lizard (*Uta stansburiana*). Although not observed, several other common reptiles are known to occur in the area and may occur in portions of the BSA, particularly associated with the BWER to the east of the BSA (Johnston et al. 2011). These include the southern alligator lizard (*Elgaria multicarinata*), San Diegan legless lizard (*Anniella stebbinsi*), western rattlesnake (*Crotalus oreganus*), gopher snake (*Pituophis catenifer*), and California kingsnake (*Lampropeltis getula californiae*).

#### 4.3.5 Birds

Birds were identified by sight and were observed throughout the BSA, especially shorebirds and other waterfowl foraging within the tidally influenced Ballona Creek. Waterfowl observed included mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), greater scaup (*Aythya marila*), American wigeon (*Mareca americana*), marbled godwit (*Limosa fedoa*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), cattle egret (*Bubulcus ibis*), brown pelican (*Pelecanus occidentalis*), ruddy turnstone (*Arenaria interpres*), red-breasted merganser (*Mergus serrator*), eared grebe (*Podiceps nigricollis*), western grebe (*Aechmophorus occidentalis*), red-throated loon (*Gavia stellata*), black-crowned night heron (*Nycticorax nycticorax*), double-crested cormorant (*Phalacrocorax auratus*), Brandt's cormorant (*Phalacrocorax penicillatus*), willet (*Tringa semipalmata*), least sandpiper (*Calidris minutilla*), Canada goose (*Branta canadensis*), California gull (*Larus californicus*), herring gull (*Larus argentatus*), and ring-billed gull (*Larus delawarensis*). Upland birds would not be expected to permanently inhabit the BSA due to lack of significant cover and nesting opportunities, except within the BWER and Del Rey Lagoon. Upland bird species observed included belted kingfisher (*Megaceryle alcyon*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), Allen's hummingbird (*Selasphorus sasin*), Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaidura macroura*), rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), American bushtit (*Psaltriparus minimus*), cliff swallow (*Petrochelidon pyrrhonota*), turkey vulture (*Cathartes aura*), and California towhee (*Melospiza crissalis*). Others that may be expected to occur include savannah sparrow (*Passerculus sandwichensis*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), surfbird (*Calidris virgata*), royal tern (*Thalasseus maximus*), pied-billed grebe (*Podilymbus podiceps*), and black oystercatcher (*Haematopus bachmani*).

#### 4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas).

Terrestrial and marine mammal species observed during the surveys included California ground squirrels (*Otospermophilus beecheyi*), pocket gophers (*Geomysidae* sp.), Virginia opossum (*Didelphis virginiana*), rat (*Rattus* sp.), domestic dogs (*Canis familiaris*), Pacific harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), and a pair of bottlenose dolphins (*Tursiops truncatus*). A number of common mammals habituated to urban environments may move through the BSA, including smaller marine



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mammals, desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and domestic species such as house cats (*Felis catus*).

Although bats were not detected in the BSA, they may forage and roost in the riparian corridors in the region where insect abundance is high (CDFW, 2000). Because this type of foraging habitat does not occur within Ballona Creek, it is unlikely that bats permanently inhabit or forage in significant numbers in the BSA; although not within the BSA, bats may roost on some of the bridges present up- and downstream of the BSA.

All wildlife species observed within the BSA are summarized in Table 3.

**Table 3: Wildlife Species Observed in the BSA**

Scientific Name	Common Name
<b>Invertebrates</b>	
Aranidae sp.	spiders
Coleoptera sp.	beetles
Diptera sp.	flies and mosquitoes
Hemiptera sp.	true bugs
Hymenoptera sp.	wasps, bees and ants
Lepidoptera sp.	moths and butterflies
Odonata sp.	dragonflies and damselflies
<b>Reptiles</b>	
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Uta stansburiana</i>	side-blotched lizard
<b>Birds</b>	
<i>Aechmophorus occidentalis</i>	western grebe
<i>Ardea alba</i>	great egret
<i>Ardea herodias</i>	great blue heron
<i>Arenaria interpres</i>	ruddy turnstone
<i>Anas platyrhynchos</i>	mallard
<i>Aythya marila</i>	greater scaup
<i>Branta canadensis</i>	Canada goose
<i>Bubulcus ibis</i>	cattle egret
<i>Calidris minutilla</i>	least sandpiper
<i>Calypte anna</i>	Anna's hummingbird
<i>Cathartes aura</i>	turkey vulture



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Scientific Name	Common Name
<i>Columba livia</i>	rock pigeon
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
<i>Egretta thula</i>	snowy egret
<i>Fulica americana</i>	American coot
<i>Gavia stellata</i>	red-throated loon
<i>Haemorhous mexicanus</i>	house finch
<i>Larus argentatus</i>	herring gull
<i>Larus californicus</i>	California gull
<i>Larus delawarensis</i>	ring-billed gull
<i>Limosa fedoa</i>	marbled godwit
<i>Mareca americana</i>	American wigeon
<i>Megaceryle alcyon</i>	belted kingfisher
<i>Melospiza crissalis</i>	California towhee
<i>Mergus serrator</i>	red-breasted merganser
<i>Nycticorax nycticorax</i>	black-crowned night heron
<i>Passer domesticus</i>	house sparrow
<i>Pelecanus occidentalis</i>	brown pelican
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<i>Phalacrocorax auratus</i>	double-crested cormorant
<i>Phalacrocorax penicillatus</i>	Brandt's cormorant
<i>Podiceps nigricollis</i>	eared grebe
<i>Psittacus erularia</i>	American bushtit
<i>Selasphorus sasin</i>	Allen's hummingbird
<i>Sturnus vulgaris</i>	European starling
<i>Tringa semipalmata</i>	willet
<i>Zenaidura macroura</i>	mourning dove
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<b>Mammals</b>	
<i>Canis familiaris</i>	domestic dog
<i>Didelphis virginiana</i>	Virginia opossum
<i>Geomyidae</i> sp.	pocket gopher
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Phoca vitulina</i>	Pacific harbor seal



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Scientific Name	Common Name
<i>Rattus sp.</i>	rat
<i>Tursiops truncatus</i>	bottlenose dolphin
<i>Zalophus californianus</i>	California sea lion

#### 4.4 JURISDICTIONAL WATERS/WETLANDS

There are four key agencies that regulate activities within inland streams, wetlands, and riparian areas in California, including the coastal zone: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA and Section 10 of the Rivers and Harbors Act; the CDFW regulates activities under the FGC Sections 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

As the Project occurs within the Coastal Zone, development may not proceed until CCC issues a Coastal Development Permit for the Project, which would require that the Project adhere to the policies of the California Coastal Act.

Five types of jurisdictional features have been documented within the Jurisdictional Survey Area (JSA), which includes the Project site and a 100-foot buffer, and the Project site: Waters of the U.S, USACE Section 10 waters, Waters of the State, CCC wetlands, and CDFW jurisdictional waters and are depicted in Figure 3 of Appendix A. Jurisdictional areas are summarized in Table 4. Further analysis of jurisdictional waters is provided in a separate Jurisdictional Delineation Report.

**Table 4: Jurisdictional Features and Project Impacts in the Jurisdictional Survey Area**

Waters of the U.S (Section 404).		CDFW Jurisdictional Waters		Waters of the State		CCC Wetlands		USACE Section 10 Waters	
SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area	SA	Perma- nent Impact Area
14.24	0.023	15.93	0.023	15.93	0.023	14.24	0.023	14.24	0.023

\* All reported impacts are in acres

#### 4.5 SOILS

Prior to conducting the delineation, historic soils data from the Natural Resources Conservation Service was used to determine potential soil types that may occur with the BSA; this data was used to determine where hydric soils have historically occurred (Appendix A, Figure 4). Table 5 identifies the soils historically known to occur within the BSA and provides a summary of characteristics of these soils.



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**Table 5: Historic Soil Units Occurring within the Biological Survey Area\***

<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>Description</b>	<b>Acres within BSA</b>
1100	Urban land, 0 to 2 percent slopes, dredged fill substratum	Associated with islands and spits at elevations between 0 and 20 feet; very high runoff; 0 inches to manufactured layer.	28.70
1150	Abaft-Beaches complex, 0 to 5 percent slopes	An excessively drained soil associated with dunes and beaches at elevations between 0 and 20 feet; parent material consists of alluvium and/or eolian sands; negligible runoff; sand (0-79 inches); more than 80 inches to restrictive feature.	16.62
1153	Urban land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced	A somewhat excessively drained soil associated with dune fields at elevations between 0 and 190 feet; fine sandy loam, loamy sand, sand; parent material consists of discontinuous human-transported material over eolian sands; low runoff; more than 80 inches to manufactured layer.	1.90
W	Water	Water	38.41

\* Western portions of BSA, within the Pacific Ocean, are not mapped as a soil type by the NRCS. Therefore, the total acres reported in this table do not represent the total size of the BSA due to the lack of available historic soils data.



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## 5.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

The background information presented above combined with habitat assessments performed during the surveys was used to evaluate special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and adjacent habitats. For the purposes of this BRTR, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California Endangered Species Act or FESA
- Are candidate species being considered or proposed for listing under these same acts
- Are recognized as SSC by the CDFW
- Are ranked by CNPS as CRPR 1, 2, 3, or 4 plant species
- Are fully protected by the FGC, Sections 3511, 4700, 5050, or 5515
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions

### 5.1 SPECIAL STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2020) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank; however, only those that are of special concern (S1-S3 rank) are evaluated under CEQA.

One vegetation community identified within the BSA is listed as sensitive: Pickleweed Mats Alliance. This community has a state rank of S3/Vulnerable; vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state. The BSA does not occur within an area covered under a Natural Community Conservation Plan or other protection plan; however, it is within the vicinity of the Ballona Wetlands Ecological Reserve, which is depicted in Appendix D (ESA 2017). No sensitive communities occur within proposed Project area.

### 5.2 DESIGNATED CRITICAL HABITAT

Critical habitat is defined by the USFWS (2020b) as, "...a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery."

There is no designated Critical Habitat designated within or adjacent to the Project site. The nearest designated critical habitat is for western snowy plover (*Charadrius alexandrinus nivosus*), along Dockweiler State Beach approximately 1.1 miles to the south. Based on existing habitat conditions, this species is not expected to nest or forage within the BSA and has a low potential to occur as a transient.



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### 5.3 SPECIAL STATUS PLANTS

Table 6 presents a list of special-status plants, including federally and state listed species and CRPR 1-4 species that are known to occur within 10 miles of the BSA or within the USGS 7.5-minute quadrangles including and surrounding the BSA (Appendix A, Figures 5, 5a, 5b and -5c provide a depiction of known species locations).

Record searches of the CNDDDB, the CNPS Online Inventory, and the Consortium of Critical Herbaria was performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present:** Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal or limited within the BSA, or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low:** A historical record (over 10 years) exists of the taxa within the BSA or general vicinity (approximately 10 miles), and the environmental conditions (including soil type) associated with taxa presence are marginal or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

While many of the species listed below in Table 6 have potential to occur within the BSA, they are not expected to occur within the Project area due to the lack of suitable habitat. Most of the special-status plant species with potential to occur are associated with the BWER and coastal dunes.



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**Table 6: Known and Potential Occurrences of Special Status Plant Taxa within the Biological Study Area**

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Aphanisma blitoides</i> <i>aphanisma</i> <i>aphanisma</i>	<b>1B.2, S2</b>	Coastal bluff scrub, coastal dunes, coastal scrub. On bluffs and slopes near the ocean in sandy or clay soils. Elevation range: 3-305 m.	February-June	<b>Low:</b> Marginally suitable habitat occurs in the uplands of Dockweiler State Beach within the BSA; however, the nearest and most recently recorded occurrence is 9 miles southeast of the BSA.
<i>Arenaria paludicola</i> Marsh sandwort	<b>FE, SE, 1B.1, S1</b>	Marshes and swamps (fresh water or brackish); sandy substrates; found in open habitats. Elevation range: 3-170 m.	March-August	<b>Low:</b> Marginally suitable habitat occurs within the portion of the BSA that includes the Del Rey Lagoon. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from 120 years ago in 1900. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Astragalus brauntonii</i> Braunton's milk-vetch	<b>FE, 1B.1, S2</b>	Chaparral, valley grasslands, coastal sage scrub, closed-cone pine forest. Occurs in disturbed habitat and requires gravelly clay soils. Elevation range: 4-640 m.	January-August	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 6 miles northwest of the BSA; however, this observation is from more than 90 years ago in 1921.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> Ventura Marsh milk-vetch	<b>FE, SE, 1B.1, S1</b>	Coastal dunes, coastal scrub, marshes, and swamps (edges, coastal salt, or brackish). Elevation range: 1-35 m.	(June) August-October	<b>Low:</b> There is marginally suitable habitat occurs in the Del Rey Lagoon within the BSA. The nearest and most recently recorded occurrence is approximately 0.1-mile northwest of the BSA; however, this observation is from more than 30 years ago in 1981. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Astragalus tener</i> var. <i>titi</i> coastal dunes milk-vetch	<b>FE, SE 1B.1, S1</b>	Coastal bluff scrub (sandy), coastal dunes, and coastal prairie (mesic). Often in vernal mesic areas. Elevation range: 1-50 m.	March-May	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 3 miles northwest of the BSA; however, this observation was recorded 90 years ago in 1930.
<i>Atriplex coulteri</i> Coulter's saltbush	<b>1B.2, S1S2</b>	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places. Alkaline or clay soils. Elevation range: 2-460 m.	March-October	<b>Low:</b> There is marginally suitable habitat within the BSA. The nearest recorded occurrence is approximately 3 miles to the northwest of the BSA; however, this observation is from more than 130 years ago in 1881.
<i>Atriplex pacifica</i> south coast saltscale	<b>1B.2, S2</b>	Coastal scrub, coastal bluff scrub, playas, coastal dunes. Alkali soils. Elevation range: 1-400 m.	March-October	<b>Low:</b> There is marginally suitable habitat along the Del Rey Lagoon included in the BSA. The nearest recorded occurrence is approximately 3 miles to the northwest of the BSA; however, this observation is from more than 130 years ago in 1881.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Atriplex parishii</i> Parish's brittle-scale	<b>1B.1, S1</b>	Native to Central and Southern California often found in dry lake beds, playas, and ephemeral vernal pools. Saline and alkaline soils. Elevation range: 0-470 m.	June-October	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3 miles northwest of the BSA.
<i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's salt-scale	<b>1B.2, S1</b>	Coastal scrub, bluffs, Chenopod scrub, playas, and vernal pools from southern California to Baja California. Elevation range: 0-200 m.	April-October	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles to the northeast of the BSA; however, this observation is from more than 110 years ago.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	<b>4.2, S4</b>	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Granite and rocky substrates. Elevation range: 100-1,700 m.	May-July	<b>Not Likely to Occur:</b> No suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 8 miles north of the BSA from 2008.
<i>Calystegia felix</i> lucky morning-glory	<b>1B.1, S1</b>	Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline, meadows and seeps (sometimes alkaline), riparian scrub (alluvial). Elevation range: 30-215 m.	March-September	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1899o.
<i>Camissoniopsis lewisii</i> Lewis' evening primrose	<b>3, S4</b>	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland on sandy or clay soils. Elevation range: 0-975 feet.	March-May (June)	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 0.3 mile east of the BSA within the BWER (ESA 2017).



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Centromadia parryi</i> <i>ssp. australis</i> southern tarplant	<b>1B.1, S2</b>	Marshes and swamps (margins), valley and foothill grasslands (vernally mesic), and vernal pools; often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass. Elevation range: 0-480 m.	May- November	<b>Low:</b> There is marginally suitable habitat along the Del Rey Lagoon included in the BSA. The nearest and most recently recorded occurrence is approximately 0.2 mile east of the BSA; however, this observation is from more than 20 years ago in 1997.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i> Orcutt's pincushion	<b>1B.1, S1</b>	Coastal bluff scrub (sandy) and coastal dunes; located on sandy soils. Elevation range: 0-100 m.	January- August	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.1 mile to the southeast of the BSA from 2011.
<i>Chenopodium littoreum</i> coastal goosefoot	<b>1B.2, S1</b>	Coastal dunes. Elevation range: 10-30 m.	April-August	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1904.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> salt marsh bird's-beak	<b>FE, SE, 1B.1, S1</b>	Coastal dunes, marshes, and swamps (coastal salt). Elevation range: 0-30 m.	May- October (November)	<b>Low:</b> Marginally suitable habitat occurs in the Del Rey Lagoon within the BSA. The nearest recorded occurrence is approximately one mile northeast of the BSA; however, this observation is from more than 110 years ago in 1901. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	<b>FC, SE, 1B.1, S1</b>	Annual; sandy areas in coastal scrub and native grasslands; Los Angeles and Ventura Counties. Elevation range: 150-1220 m.	April-July	<b>Low:</b> A very small amount of marginally suitable habitat occurs near the Del Rey Lagoon within the eastern portion of the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1901. Suitable habitat would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Dithyrea maritima</i> beach spectaclepod	<b>ST, 1B.1, S1</b>	Coastal dunes, coastal scrub (sandy). Elevation range: 3-50 m.	March-May	<b>Low:</b> Marginally suitable habitat occurs with the portion of the BSA included in the BWER. The nearest recorded occurrence is within the BSA; however, this observation is from over 110 years ago in 1903.
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	<b>FE, SE, 1B.1, S1</b>	Coastal scrub, valley and foothill grassland, and vernal pools. California to Baja. Elevation range: 20-620 m.	April-June	<b>Low:</b> A very small amount of marginally suitable habitat occurs within the eastern portion of the BSA in the BWER. The nearest and most recently recorded occurrence is approximately 4 miles southeast of the BSA; however, this observation is from more than 110 years ago in 1901. Marginally suitable habitat would not be impacted by the project. Therefore, there would be No Effect on this species.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Erysimum suffrutescens</i> Suffrutescent wallflower	<b>4.2, S3</b>	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Located on coastal dunes and bluffs. Elevation range: 0-490 feet.	January- July	<b>Moderate:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.3 mile east within the BWER (ESA 2017).
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	<b>1A, SH</b>	Marshes and swamps (coastal salt and freshwater). Elevation range: 10-1,525 m.	August- October	<b>Moderate:</b> Suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1891.
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	<b>1B.1, S1</b>	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. Elevation range: 15-1,645 m.	February- July (September)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recent recorded occurrence is approximately 3 miles southeast of the BSA; however, this observation is from more than 80 years ago in 1932.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	<b>1B.1</b>	Marshes and swamps (coastal salt), playas, and vernal pools; Usually found on alkaline soils in playas, sinks, and grasslands. Elevation range: 1-1,375 m.	February- June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from 40 years ago in 1980.
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i> white-veined monardella	<b>1B.3, S3</b>	Chaparral and cismontane woodland. Known only from the Santa Monica, Santa Ynez, and Sierra Madre Mountains. Elevation range: 50-1,525 m.	May-August (April, September- December)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 9 miles northwest of the BSA; however, this observation is from more than 100 years ago in 1907.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Nama stenocarpa</i> mud nama	<b>2B.2, S1S2</b>	Marshes and swamps. Lake shores, riverbanks, intermittently wet areas. Elevation range: 5-500 m.	January- July	<b>Not Likely to Occur:</b> Suitable habitat does not occur within the BSA. The nearest and most recently recorded occurrence is approximately 5 miles northwest of the BSA from more than 110 years ago in 1902.
<i>Nasturtium gambelii</i> Gambel's water cress	<b>FE, ST, 1B.1, S1</b>	Marshes and swamps (freshwater or brackish). Elevation range:5-330 m.	April- October	<b>Low:</b> A very small amount of marginally suitable habitat occurs along the Del Rey Lagoon included in the BSA. The nearest and most recently recorded occurrence is approximately 6 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1904. Del Rey Lagoon would not be impacted by the project. Therefore, there would be No Effect on this species.
<i>Navarretia fossalis</i> spreading navarretia	<b>FT, 1B.1, S2</b>	Marshes and swamps (assorted shallow freshwater), playas, vernal pools, and Cheonopod scrub. Elevation range: 30-655 m.	April-June	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 4 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1906.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	<b>1B.2, S2</b>	Coastal scrub, valley and foothill grassland, vernal pools, meadows and seeps. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevation range: 3- 1,235 m.	April-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is 4 miles southeast of the BSA; however, this observation is from more than 110 years ago in 1906.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Orcuttia californica</i> California Orcutt grass	<b>FE, SE, 1B.1, S1</b>	Occurs only in large and deep vernal pools. Clay soils with an impervious subsurface layer and longer inundation periods. Elevation range: 15-660 m.	April-August	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 8 miles southeast of the BSA; however, this observation is from more than 40 years ago in 1976.
<i>Phacelia ramosissima</i> var <i>australitoralis</i> South Coast branching phacelia	<b>3.2, S3</b>	Chaparral, coastal dunes, coastal scrub, coastal salt marshes. Located on sandy, sometimes rocky soils. Elevation range: 20-975 feet.	March-August	<b>High:</b> Suitable habitat occurs within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded occurrence is 0.3 mile east of the BSA within the BWER (ESA 2017).
<i>Phacelia stellaris</i> Brand's star phacelia	<b>1B.1, S1</b>	Coastal dunes and coastal scrub. Elevation range: 1-400 m.	March-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is within the BSA; however, this observation is from more than 110 years ago in 1909.
<i>Potentilla multijuga</i> Ballona cinquefoil	<b>1A, SX</b>	Meadows and seeps (brackish), Elevation range: 0-2 m.	June-August	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is within the BSA; however, this observation is from 130 years ago in 1890.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	<b>2B.2, S2</b>	Chaparral, cismontane woodland, coastal scrub, and riparian woodland. 0-2100 m.	(July) August- November (December)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 10 miles; however, this observation is from more than 110 years ago in 1907.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Quercus dumosa</i> Nuttall's scrub oak	<b>1B.1, S3</b>	Closed-cone coniferous forest, chaparral, coastal scrub. Generally, on sandy soils near the coast; sometimes on clay loam. Elevation range: 15-640 m.	February-May (May-August)	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 4 miles northeast of the BSA from 2009.
<i>Sidalcea neomexicana</i> salt spring checkerbloom	<b>2B.2, S2</b>	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub; alkali springs and marshes. Elevation range: 3-2,380 m.	March-June	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is 3 miles northeast of the BSA; however, this observation is from over 90 years ago in 1922.
<i>Suaeda taxifolia</i> woolly seablite	<b>4.2, S4</b>	Coastal bluff scrub, coastal dunes, margins of coastal salt marshes. Elevation range: 0-165 feet.	January-December	<b>High:</b> Suitable habitat occurs within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded occurrence is 0.3 mile east of the BSA in the BWER (ESA 2016).
<i>Symphotrichum defoliatum</i> San Bernardino aster	<b>1B.2, S2</b>	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernal mesic grassland or near ditches, streams and springs; disturbed areas. Elevation range: 3-2,045 m.	July-November	<b>Low:</b> Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded occurrence is 6 miles northeast of the BSA; however, this observation is from more than 110 years ago in 1904.
<i>Symphotrichum greatae</i> Greata's aster	<b>1B.3, S2</b>	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. 300-2010 m.	Jun-Oct	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest recorded occurrence is approximately 8 miles north of the BSA.



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Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Thelypteris puberula</i> var. <i>sonorensis</i> Sonoran maiden fern	<b>2B.2, S2</b>	Meadows and seeps (seeps and streams) and riparian habitats. 50-610 m.	Jan-Sept	<b>Not Likely to Occur:</b> Suitable habitat does not occur with the BSA. The nearest and most recently recorded occurrence is approximately 7 miles northwest of the BSA from 2010.

**Status Codes***Federal Designation*

FE = Federally Endangered

FC = Federal Candidate Species for Listing

*CDFW State Designation*

SE = State Endangered

ST = State Threatened

*State Ranking*

S1 = Critically Imperiled

S2 = Imperiled

S3 = Vulnerable

S4 = Apparently Secure

S5 = Secure

SH = Possibly Extirpated

SX = Presumed Extirpated

*CNPS CRPR Designation*1A = Plants considered by the CNPS to be extinct in California  
1B = Plants rare, threatened, or endangered in California and elsewhere.

2A. Presumed extinct in California, extant and more common elsewhere

2B. Rare or Endangered in California, more common elsewhere

3. Plants for which we need more information - Review list

4. Plants of limited distribution - Watch list

.1 = Seriously threatened in California (high degree/immediacy of threat).

.2 = Fairly threatened in California (moderate degree/immediacy of threat).

BSA = Biological Study Area

BWER = Ballona Wetlands Ecological Reserve

m = meter

## 5.4 SPECIAL STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the FESA or California Endangered Species Act, taxa proposed for such listing, SSC, and other taxa that have been identified by USFWS, CDFW, or local jurisdictions as unique or rare and that have the potential to occur within the BSA. The only special-status wildlife species observed in the BSA during the survey was the California brown pelican. They were observed within Ballona Creek and soaring over the BSA.

The CNDDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles, as discussed in Section 2.0. Table 7 summarizes the special-status wildlife taxa known to occur regionally and their potential for occurrence in the BSA (Appendix A, Figures 5, 5a, 5b and 5c provide a depiction of previously reported species locations). Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.



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- **High:** Habitat (including soils) for the taxa occurs onsite, and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs onsite, and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs onsite; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs within the BSA and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

While many of the species listed in Table 7 have potential to occur within the BSA, they are not expected to occur within the Project area due to the lack of suitable habitat. Although some of the more mobile species may occasionally occur as a transient visitor, they would not occupy Project area for any significant amount of time as the Project area is comprised of a moderately urbanized, developed area consisting of concrete and rip rap jetties along the mouth of Ballona Creek with high pedestrian, cyclist, and boat traffic nearby.



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**Table 7: Known and Potential Occurrences of Special-Status Wildlife Taxa within the Biological Study Area**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>INVERTEBRATES</b>					
<i>Bombus crotchii</i>	Crotch bumble bee	<b>SC, S1S2</b>	Coastal California east to the sierra-cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile east of the BSA; however, this observation is from approximately 30 years ago in 1981.	<b>Moderate</b>
<i>Brennania belkini</i>	Belkin's dune tabanid fly	<b>S1S2</b>	Occurs in exposed sandy substrates within southern foredune and southern dune scrub plant communities. Adults fly from May to July and breed only on coastal sand dunes.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 0.1 mile northeast of the BSA; however, this observation is from 40 years ago in 1980.	<b>Low</b>
<i>Carolella busckana</i>	Busck's gallmoth	<b>SH</b>	Coastal scrub dune habitat.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 1 mile southeast of the BSA; however, this observation is from over 80 years ago in 1939.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	<b>S2</b>	Extirpated from most sites but documented extant populations from north of San Francisco to Mexico. Occurs in areas adjacent to non-brackish water in clean, dry, light-colored sand in the upper zones and coastal sand dunes. Burrows are located in moist soils that are far enough away from water bodies to avoid being inundated with water.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 110 years ago in 1907.	<b>Not Likely to Occur</b>
<i>Cicindela senilis frosti</i>	senile tiger beetle	<b>S1</b>	Herbaceous wetlands, playa, coastal and alkali mud flats, salt marsh, and marine shorelines. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone. Extinct over much of its former range in coastal Southern California. The only known healthy population is within an inland salt marsh in Lake Elsinore. Adults overwinter, but larvae always present.	Suitable habitat occurs within the BSA; however, it should be noted that the nearest and most recently recorded CNDDDB occurrence is 5 miles southeast of the BSA; however, this observation is from more than 40 years ago in 1979.	<b>Moderate</b>
<i>Coelus globosus</i>	globose dune beetle	<b>S1S2</b>	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	Marginally suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is within the BSA; however, this observation is from over 40 years ago in 1979.	<b>Moderate</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Danaus plexippus</i> (pop. 1)	monarch butterfly – California overwintering population	<b>S2S3</b>	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation. Roosts located in wind-protected tree groves (eucalyptus, pine, cypress), with nectar and water sources nearby.	Marginally suitable foraging habitat occurs within the BSA and is known to occur within the BWER located 0.3 mile east of the BSA. The nearest recorded CNDDDB occurrence is 0.6 mile east of the BSA from 2014.	<b>Moderate</b>
<i>Eucosma hennei</i>	Henne's eucosman moth	<b>S1</b>	Endemic to the Los Angeles/El Segundo Dunes in Los Angeles County. Open sand, undisturbed sand dunes and dense shrubs populated with the larval host plant <i>Phacelia ramosissima</i> var. <i>australitoralis</i> .	The species' larval host plant was not observed with the BSA, and suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 1 mile southeast; however, this observation is from more than 30 years ago in 1984.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Euphilotes battoides allyni</i>	El Segundo blue butterfly	<b>FE, S1</b>	Historically ranged over the entire Los Angeles and El Segundo Dunes and the northwestern Palos Verdes Peninsula in southwestern Los Angeles County. Currently distributed on three remnant habitats within its former range supporting coastal sand dunes with coast buckwheat ( <i>Eriogonum parvifolium</i> ). All life stages depend on coast buckwheat and possibly loose sand.	The species' host plant was not observed within the BSA, but occurrences have been mapped within the portions of the BWER less than 1 mile southeast of the BSA (MBC et al. 2016). The species is known to occupy the southwestern portion of the BWER and was observed in 2013. The El Segundo Butterfly Recovery Unit covers the portions of Ballona west of State Route 1 to the ocean, which includes the BSA (MBC et al. 2016). The nearest recorded CNDDDB occurrence is approximately 1.5 miles to the southeast of the BSA in 2005. May Affect, Not Likely to Adversely Affect.	<b>Low</b>
<i>Glaucopsyche lygdamus palosverdesensis</i>	Palos Verdes blue butterfly	<b>FE, S1</b>	Dependent on two known larval hostplants, Santa Barbara milkvetch ( <i>Astragalus trichopodus</i> var. <i>lonchus</i> )—also known as locoweed—and common deerweed ( <i>Lotus scoparius</i> ) within coastal scrub habitat. Known only from the Palos Verdes peninsula.	One of the species of the two known larval host plants (common deerweed) was observed along the margins of the Del Rey Lagoon within the BSA; however, the nearest and most recently recorded CNDDDB occurrence is 6 miles south of the BSA from 2001. May Affect, Not Likely to Adversely Affect.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Onychobaris langei</i>	Lange's El Segundo Dune weevil	<b>S1</b>	Occurs in southern foredune and southern dune scrub plant communities. Possible food plant is an evening primrose ( <i>Oenothera</i> sp.).	Marginally suitable foraging habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 1 mile southeast of the BSA; however, this observation is from more than 80 years ago in 1938.	<b>Low</b>
<i>Panoquina errans</i>	wandering (saltmarsh) skipper	<b>S2</b>	Occurs in localized colonies along the coast of Southern California to Baja California. It is associated with its larval host plants, salt grass, which primarily occurs in sandy habitats along beaches, bluffs, and estuaries.	Marginally suitable habitat occurs within the BSA, but the species larval host plant was not observed. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile southeast from 2010.	<b>Low</b>
<i>Socalchemmis gertschi</i>	Gertsch's socialchemmis spider	<b>S1</b>	Known from Brentwood and Topanga. Habitat consists of sage scrub, chaparral, oak woodland, coniferous forest, generally in rocky outcrops or talus slopes in non-arid climates	No suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 5 miles northwest of the BSA; however, this observation is from more than 60 years ago in 1952.	<b>Not Likely to Occur</b>
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	<b>FE, S1S2</b>	Endemic to western Riverside, Orange, and San Diego Counties in areas of tectonic swales and earth slump basins in grassland and coastal sage scrub. Inhabits seasonally astatic pools filled by winter and spring rains. Hatches in warm water later in the season.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 1 mile southeast of the BSA from 2005.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Trigonoscuta dorothea dorothea</i>	Dorothy's El Segundo Dune weevil	<b>S1</b>	Distributed habitats only along coastal southern California from Point Dume to Point Fermin and is associated with southern dune scrub plant community.	Marginally suitable habitat occurs within the BSA, and the nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from over 60 years ago in 1954.	<b>Moderate</b>
<i>Tryonia imitator</i>	mimic tryonia (California brackishwater snail)	<b>S2</b>	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	Suitable habitat occurs along the Del Rey Lagoon included within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded CNDDDB occurrence is within the BSA from about 2001.	<b>High</b>
<b>FISH</b>					
<i>Oncorhynchus mykiss irideus</i> (pop. 10)	steelhead - southern California DPS	<b>FE, S1</b>	Inhabits seasonally accessible rivers and streams with gravel for spawning. Requires sufficient flows in their natal streams to be able to return from oceans and lakes to spawn. Federal listing refers to populations from Santa Maria River south to the southern extent of the range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	No suitable spawning habitat occurs within the BSA. The nearest recorded occurrence is approximately 4 miles upstream of Ballona Creek from 2008. May act as a transient passing through the BSA.	<b>Low (transient, no spawning)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>AMPHIBIANS</b>					
<i>Emys marmorata</i>	western pond turtle	<b>SSC, S3</b>	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.2-mile northeast of the BSA; however, this observation is from more than 30 years ago in 1987.	<b>Not Likely to Occur</b>
<i>Spea hammondi</i>	western spadefoot	<b>SSC, S3</b>	Occurs in the Central Valley and adjacent foothills and the non-desert areas of Southern California and Baja California. Grassland habitats and valley-foothill hardwood woodlands. Vernal pools and other temporary rain pools, cattle tanks, and occasionally pools of intermittent streams are essential for breeding and egg-laying. Burrows in loose soils during dry season.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 3 miles north of the BSA from more than 80 years ago in 1941.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>REPTILES</b>					
<i>Anniella stebbinsi</i>	Southern California legless lizard	<b>SSC, S3</b>	Generally south of the transverse range, extending to northwestern Baja California; occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Piute mountains in Kern County; variety of habitats; generally in moist, loose soil; they prefer soils with a high moisture content.	Suitable habitat is present within the BSA; however, the species was not observed within the BSA during biological surveys. The nearest recorded CNDDDB occurrence is 0.1 mile northeast of the BSA from 2016.	<b>High</b>
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	<b>SSC, S3</b>	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Limited suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is 7 miles northwest of the BSA from 2007.	<b>Moderate</b>
<i>Phrynosoma blainvillii</i>	coast horned lizard	<b>SSC, S3S4</b>	Primarily in sandy soil in open areas, especially sandy washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 2,400 meters (8,000 feet) elevation.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 7 miles northeast of the BSA; however, this observation is from over 60 years ago in 1953.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Thamnophis hammondi</i>	two-striped gartersnake	<b>SSC, S3S4</b>	Coast California from vicinity of Salinas to northwest Baja California. From sea level to about 7,000 feet elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence is 4 miles northwest of the BSA from 2010.	<b>Not Likely to Occur</b>
<b>BIRDS</b>					
<i>Agelaius tricolor</i>	tricolored blackbird	<b>ST, SSC, BCC, S1S2</b>	Highly colonial species, most numerous in the Central Valley and vicinity, and largely endemic to California. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Forages in grassland and cropland habitats with insect prey within a few kilometers of the colony. They are itinerant breeders, nesting more than once at different locations during the breeding season.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 7 miles southeast of the BSA; however, this observation is from about 80 years ago.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Athene cunicularia</i>	burrowing owl	<b>SSC, BCC, S3</b>	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Owls are found in microhabitats highly altered by humans, including flood risk management and irrigation basins, dikes, banks, abandoned fields surrounded by agriculture, and road cuts and margins. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 0.1 mile southeast of the BSA from 2010.	<b>Low</b>
<i>Buteo swainsoni</i>	Swainson's hawk	<b>ST, BCC, S3</b>	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Suitable habitat does not occur within the BSA. The nearest recorded CNDDDB occurrence is 3 miles northwest of the BSA; however, this observation is from more than 120 years ago in 1896.	<b>Not Likely to Occur (nesting)/Low (transient)</b>
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	<b>FT, SSC, BCC, S2S3</b>	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	No suitable nesting habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 100 years ago in 1914.	<b>Not Likely to Occur (nesting)/ Low (transient)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Coturnicops noveboracensis</i>	yellow rail	<b>SSC, BCC, S1S2</b>	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Suitable habitat does not occur within the BSA. The nearest and most recently recorded CNDDDB occurrence was 4 miles southeast of the BSA; however, this observation is from more than 20 years ago in 1998.	<b>Not Likely to Occur</b>
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	<b>FE, SE, S1</b>	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S.	Although suitable nesting habitat is not present within the BSA, foraging habitat is present within the BWER, which is located 0.1 mile east of the BSA. The species may pass through the site in a transient capacity during migration. The nearest recorded CNDDDB occurrence is 7 miles northeast of the BSA; however, this observation is from more than 120 years ago in 1894. May Affect, Not Likely to Adversely Affect.	<b>Not Likely to Occur (nesting)/ Low (transient)</b>
<i>Laterallus jamaicensis coturniculus</i>	California black rail	<b>ST, FP, BCC, S1</b>	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 90 years ago in 1928.	<b>Not Likely to Occur</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	<b>SE, S3</b>	Locally common non-migratory resident of coastal saltmarsh. An obligate breeder in middle elevation saltmarsh, nearly always characterized by pickleweed ( <i>Salicornia</i> spp.), either in tidal situations or non-tidal alkaline flats nearby. Foraging primarily stems from saltmarsh and mudflat, individuals, particularly post-breeding birds, can be found foraging in a wide variety of habitats including upper marsh, adjacent ruderal and ornamental vegetation, open beach and mudflat, and even dirt and gravel parking lots.	Suitable nesting and foraging habitat occur within the BSA and in the BWER, which is located 0.1 mile east of the BSA. The BWER is known to support nesting and foraging Belding's savannah sparrows; however, the species was not observed within the BSA during biological surveys. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile northeast of the BSA from 2001.	<b>High</b>
<i>Pelecanus occidentalis californicus</i>	California brown pelican	<b>FD, SD, FP, S3</b>	Typically found on rocky, sandy, or vegetated offshore islands; beaches; open sea (for feeding); harbors; marinas; estuaries; and breakwaters. Typically build nests on the ground or on native shrubs.	Although no suitable nesting habitat occurs within the BSA, foraging habitat persists within the creek, as well as the BWER, which is located 0.1 mile east of the BSA. The species was observed within the creek and flying over the BSA. The nearest and most recently recorded CNDDDB occurrence is approximately 0.2 mile southwest of the BSA from 2000.	<b>Present</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Polioptila californica californica</i>	coastal California gnatcatcher	<b>FT, SSC, S2</b>	Obligate, permanent resident of coastal sage scrub below 2500 feet in Southern California. Low, coastal sage scrub in arid washes and on mesas and slopes with California sagebrush ( <i>Artemisia californica</i> ) as a dominant or co-dominant species. Not all areas classified as coastal sage scrub are occupied.	No suitable nesting habitat occurs within the BSA; however, the species was observed foraging within the BWER in 2011, well outside of the BSA (ESA 2017). The nearest recorded CNDDDB occurrence is approximately 2 miles northeast of the BSA; however, this observation is from 40 years ago in 1980. Species may be observed foraging in or migrating through the project area. May Affect, Not Likely to Adversely Affect.	<b>Moderate</b>
<i>Riparia riparia</i>	bank swallow	<b>ST, S2</b>	Low areas along rivers, streams, ocean coasts, and reservoirs. Nesting habitat is vertical banks of fine textured soils, most commonly along streams and rivers. Forage in open areas and avoid places with tree cover.	Although no suitable nesting habitat occurs within the BSA, the species may use the BWER, which is located 0.1 mile east of the BSA, as foraging habitat. The nearest and most recently recorded CNDDDB occurrence is approximately 5 miles northwest of the BSA; however, this observation is from more than 110 years ago in 1907.	<b>Not Likely to Occur (nesting)/Low (transient)</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sternula antillarum browni</i>	California least tern	<b>FE, SE, FP, S2</b>	Nests on sandy upper ocean beaches and open barren sites, and occasionally uses mudflats. Forages on adjacent surf line, estuaries, or the open ocean. Colonies are located near the ocean shoreline (within 0.5 mile [about 800 meters]), typically on nearly flat, loose sandy substrates with lightly scattered short vegetation and debris, although some colonies have been located on hard-packed surfaces, even unused asphalt. Colony sites must provide access to the shoreline for juveniles and must be relatively free of predators, or the colony may abandon breeding efforts before completion.	Although no nesting habitat occurs within the BSA, there are known nesting sites 0.2 miles north of the BSA in Venice Beach and within the eastern portion of the BWER, approximately one mile east of the BSA (ESA 2017). The species is known to forage in Ballona Creek, Marina del Rey Harbor, and the BWER. The nearest recorded CNDDDB occurrence is approximately 0.2 mile northeast of the BSA; however, this observation is from more than 30 years ago in 1987. May Affect, not Likely to Adversely Affect.	<b>Not Likely to Occur (nesting)/High (foraging/transient)</b>
<i>Vireo bellii pusillus</i>	least Bell's vireo	<b>FE, SE, S2</b>	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Often inhabits structurally diverse woodlands along watercourses including cottonwood-willow and oak woodlands and mulefat scrub. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	The species is known to nest and forage in the BWER and has been recorded in the Playa Vista riparian corridor near the BSA in 2010; however, no individuals were observed within the BSA at that time (ESA 2017). The nearest and most recently recorded CNDDDB occurrence is 1 mile southeast of the BSA from 2010. Suitable nesting habitat occurs approximately 0.4 mile northeast of the BSA. May Affect, not Likely to Adversely Affect.	<b>High</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<b>MAMMALS</b>					
<i>Antrozous pallidus</i>	pallid bat	<b>SSC, S3</b>	Desert, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 3 miles northeast of the BSA; however, this observation is from more than 80 years ago in 1932.	<b>Not Likely to Occur</b>
<i>Eumops perotis californicus</i>	western mastiff bat	<b>SSC, S3S4</b>	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, bridges, trees, and tunnels. In California, most records are from rocky areas at low elevations.	No suitable habitat occurs within the BSA. The nearest recorded CNDDDB occurrence is approximately 3 miles northeast of the BSA; however, this observation is from more than 90 years ago in 1925.	<b>Not Likely to Occur</b>
<i>Lasionycteris noctivagans</i>	silver-haired bat	<b>S3S4</b>	Coastal and montane forest. Forages over streams, ponds, and brushy areas, and requires follows of trees for roost habitat. Conifer and mixed conifer/hardwood forests. Roosts mainly in hollows or crevices of trees, but may also roost in rock crevices, mines, or caves. Forages over streams, ponds, and brushy areas.	No suitable habitat occurs within the BSA, but species may appear as a migratory transient. The nearest and most recently recorded CNDDDB occurrence is 4 miles northwest of the BSA; however, this observation is from over 30 years ago in 1985.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Lasiurus cinereus</i>	hoary bat	<b>S4</b>	Forages over a wide range of habitats, but prefers open habitats with access to water and trees for roosting. Typically solitary, roosting in the foliage of shrubs or coniferous and deciduous trees. Roosts are usually near the edge of a clearing.	No suitable habitat occurs within the BSA, but species may appear as a migratory transient. The nearest recorded CNDDDB occurrence is 3 miles northeast of the BSA; however, this observation is from more than 80 years ago in 1939.	<b>Low</b>
<i>Microtus californicus stephensi</i>	south coast marsh vole	<b>SSC, S1S2</b>	Occurs in the area of tidal marshes in Los Angeles, Orange, and southern Ventura Counties.	Suitable habitat occurs with the BSA and was captured within the BWER in 2010 and 2011. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile east of the BSA from 2011.	<b>High</b>
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	<b>SSC, S3</b>	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 4 miles southeast of the BSA; however, this observation is from over 20 years ago in 1994.	<b>Not Likely to Occur</b>
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	<b>FE, SSC, S1</b>	An obligate resident of fine-grained sandy soils of coastal strand, coastal dunes, river and marine alluvium, and coastal sage scrub in close proximity to the ocean and has never been collected more than 2 miles from the coast. Occurrences are closely associated with loose or friable soils that permit burrowing.	No suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is within the BSA; however, this observation is from more than 80 years ago in 1938.	<b>Low</b>



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sorex ornatus salicornicus</i>	southern California saltmarsh shrew	<b>SSC, S1</b>	Coastal marshes in Los Angeles, Orange and Ventura Counties. Requires dense vegetation and woody debris for cover.	Marginally suitable habitat occurs within the BSA. The nearest and most recently recorded CNDDDB occurrence is 0.1 mile southeast of the BSA from 2009.	<b>Moderate</b>
<i>Taxidea taxus</i>	American badger	<b>SSC, S3</b>	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open and uncultivated ground. Preys on burrowing rodents. Digs burrows.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is 7 miles northeast of the BSA.	<b>Not Likely to Occur</b>

**State Rankings:**

S1 = Critically Imperiled  
S2 = Imperiled  
S3 = Vulnerable  
S4 = Apparently Secure  
S5 = Secure  
SH = Possibly Extirpated  
SX = Presumed Extirpated  
SC = State Candidate for Listing  
SD = State Delisted  
SA = CDFW Special Animal  
SE = State Endangered  
ST = State Threatened  
FP= Fully Protected  
SSC = Species of Special Concern

**Federal Rankings:**

FE = Federally Endangered  
FD = Federally Delisted  
BCC = USFWS Bird of Conservation Concern

BSA=Biological Study Area  
BWER = Ballona Wetlands Ecological Reserve  
CNDDDB =California Natural Diversity Database



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## 5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian “movement corridor” (Bulger et al. 2002; Hunt 1993; Ramirez 2002, 2003a, 2003b; Rathbun et al. 1992; Trenham 2002). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Beier 1993, 1995; Newmark 1995; Noss et al. 1996, n.d.). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that link two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors, within larger natural habitat areas that are frequently used by animals to facilitate movement and provide access to water, food, cover, den sites, and other necessary resources. A travel route is generally preferred by a species because it provides the least amount of



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
Biological Resources Technical Report

## 5.0 Special-Status Biological Resources

topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll 1997).

- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are human-made and include culverts, underpasses, drainage pipes, bridges, tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll 1997).

### 5.5.1 Wildlife Movement in the BSA

The BSA is located in a heavily developed area within the communities of Playa del Rey and Marina del Rey; but it has localized portions of open space and open water, particularly the Del Rey Lagoon, Dockweiler State Beach, Ballona Creek, and Marina del Rey Main Channel. The BSA is amid conditions that would be expected to significantly constrain the movement of wildlife within the region and, by extension, through the site. The area surrounding the BSA is characterized by residential and commercial development and infrastructure, including significant barriers to terrestrial wildlife movement such as buildings, fencing, jetties, and busy multi-lane roadways. These areas may harbor common species habituated to life in urban environments such as Virginia opossum, raccoon, Audubon’s cottontail, California ground squirrel, and other small rodents. The localized portions of open area likely provide “live-in habitat,” foraging habitat, or habitat for transient and migratory species.

The southwestern fenced boundary of the Ballona Wetlands Ecological Reserve is 0.1 mile east of the BSA. It is a regionally important stopover site for both resident and migratory birds, and is within the Pacific Flyway, a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia. Each year, at least one billion birds migrate along the Pacific Flyway (Audubon 2020). Ballona Creek and tidal channels provide movement for marine fish species and marine mammals (*Phocidae* sp. and *Otariidae* sp.) through Ballona Creek and the Marina del Rey Main Channel.

Within the BSA, the level of surrounding urban development, presence of physical barriers, and lack of native habitat outside of the adjacent BWER, would significantly constrain the passage of most large terrestrial wildlife known to occur in the region. Terrestrial wildlife corridors between the BSA and other areas of open space are extremely constrained by Ballona Creek, roadways, and commercial and residential development. The BSA does not occur within any known wildlife movement corridor or habitat linkage as identified by the Los Angeles County Department of Regional Planning (2014), South Coast Wildlands (2008), or Penrod et al (2001).



**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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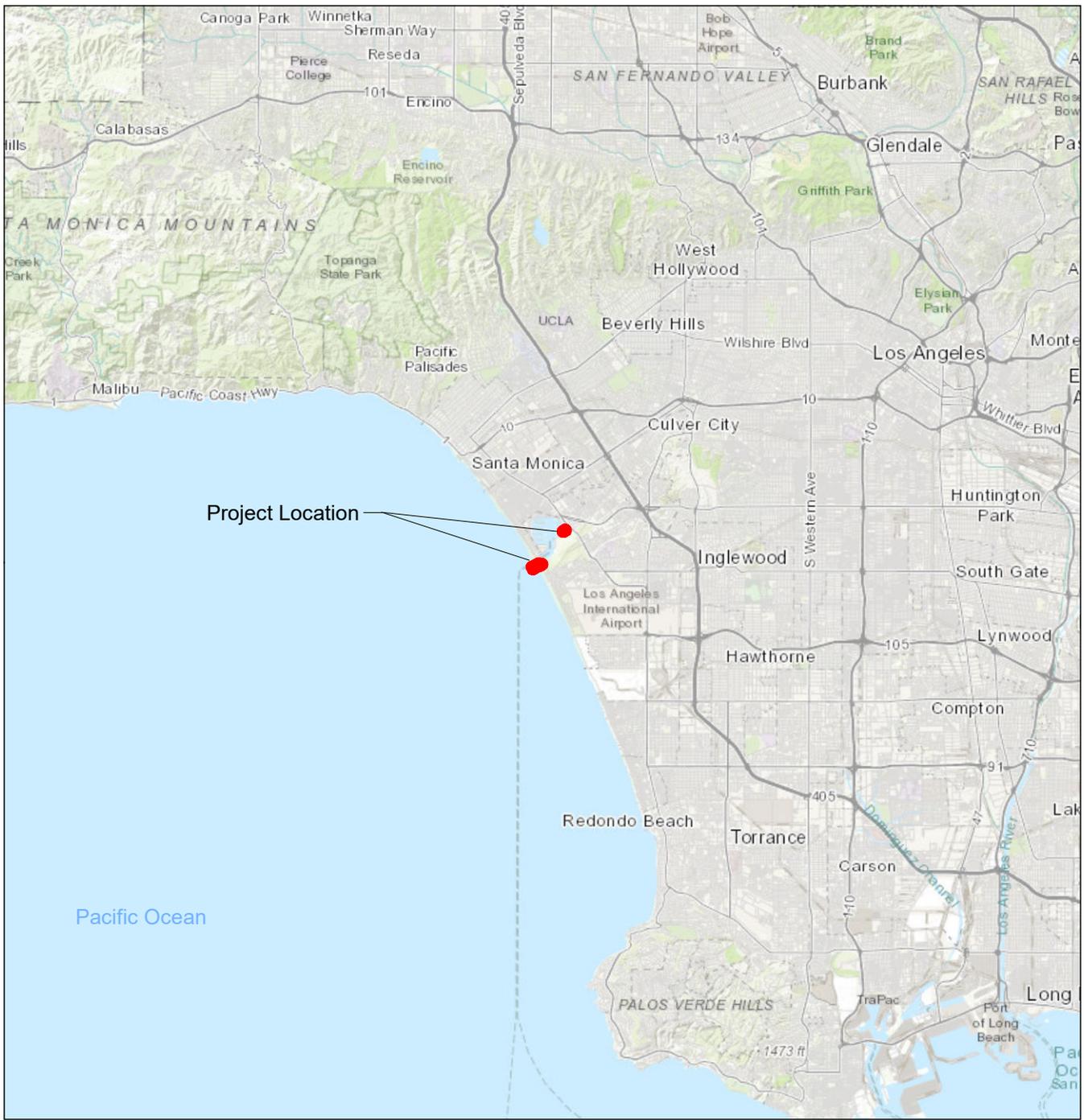
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## Appendix A FIGURES

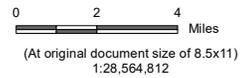




Project Location



 Project Location



Project Location Prepared by DL on 2020-09-24  
 Ballona Creek TR by ST on 2020-09-24  
 Los Angeles County, California IR by JV on 2020-09-24

Client/Project 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

Figure No.

1

Title

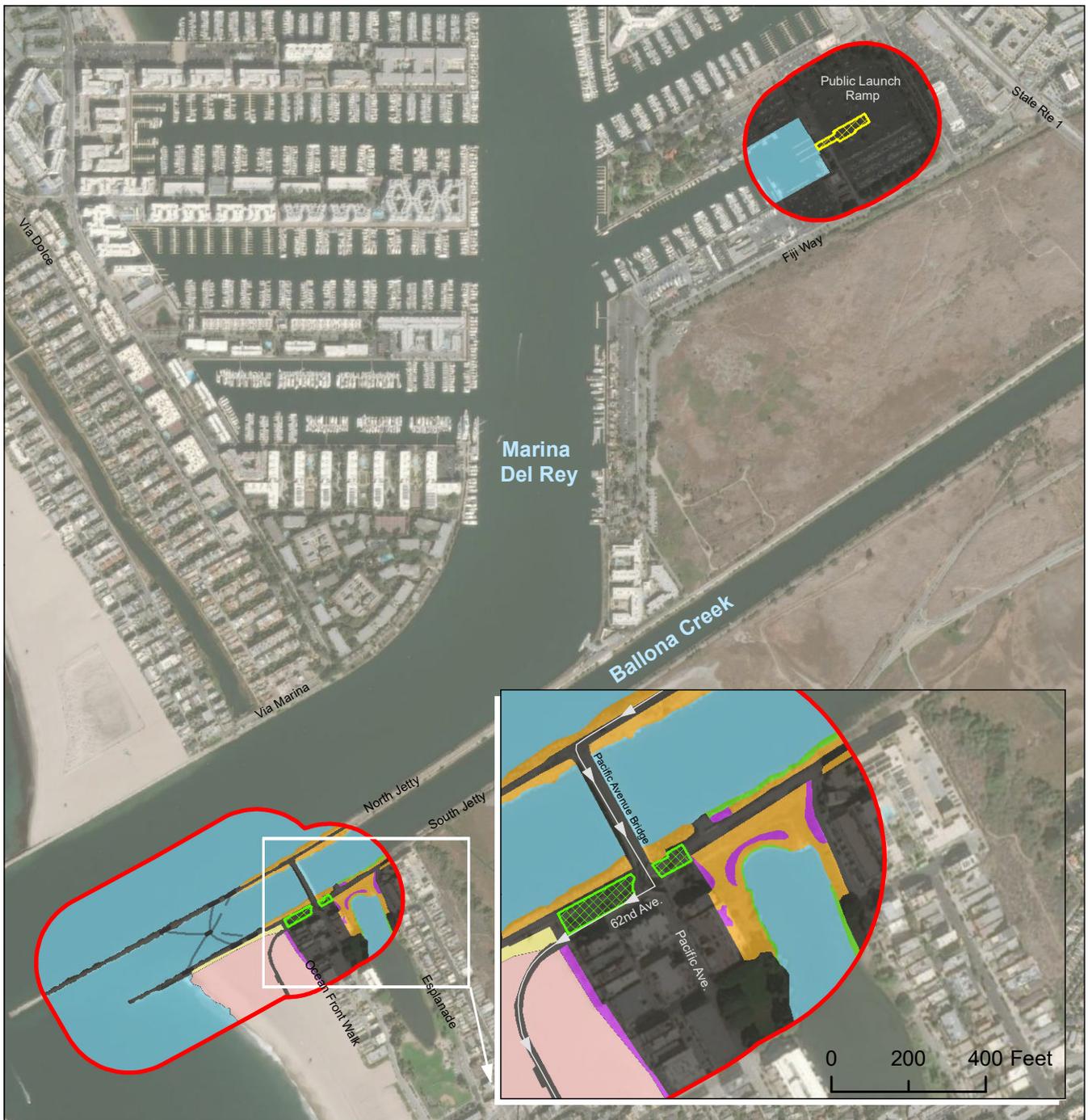
Project Location Map

- Notes**
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  2. Data Sources: Stantec 2020.
  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
  4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.

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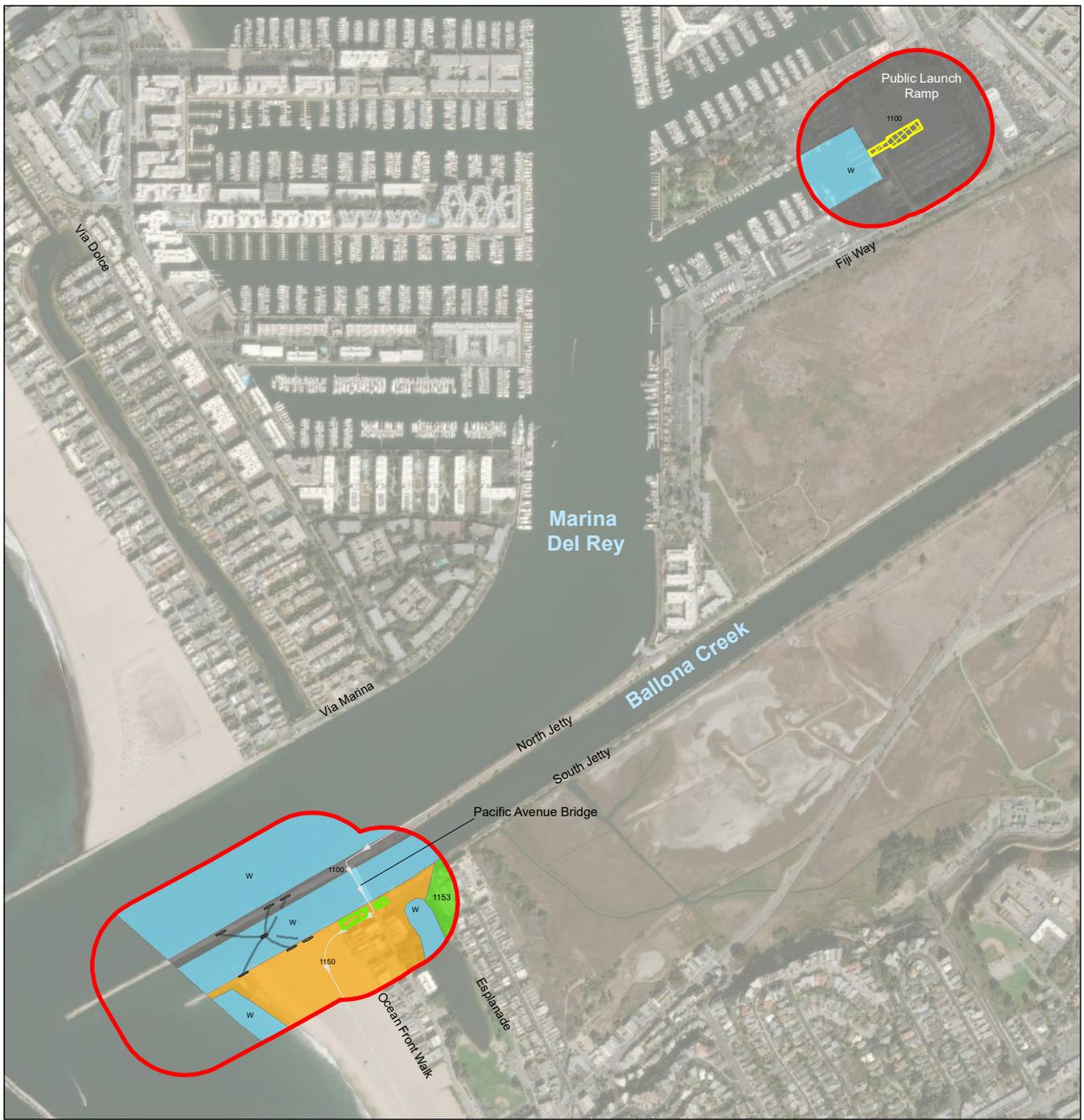
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<p><b>Biological Survey Area</b></p> <p>Existing Bikeways</p> <p><b>Project Footprint</b></p> <ul style="list-style-type: none"> <li>Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]</li> <li>Mooring Footprint [0.113 Acres]</li> <li>Trash Boom</li> <li>Mooring Line</li> <li>Mooring Construction Staging Areas [0.37 Acres]</li> <li>Interceptor Assembly Area [0.63]</li> </ul> <p><b>Notes</b></p> <ol style="list-style-type: none"> <li>1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet</li> <li>2. Interceptor Centroid Coordinates: 33.962071, -118.455715</li> <li>3. Data Sources: Stantec 2020.</li> <li>4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</li> <li>5. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.</li> </ol>	<p><b>Vegetation Communities &amp; Land Cover Types</b></p> <ul style="list-style-type: none"> <li>Developed (34.88 Acres)</li> <li>Dune Mat Alliance (0.41 Acres)</li> <li>Ice Plant Mat Alliance (0.46 Acres)</li> <li>Invasive Monoculture (2.76 Acres)</li> <li>Open Water (55.96 Acres)</li> <li>Pickleweed Mats Alliance (0.24 Acres)</li> <li>Sandy Beach (7.30 Acres)</li> </ul>	<p>0 550 1,100 Feet</p> <p>(At original document size of 8.5x11) 1:13,200</p> <p><b>Stantec</b></p> <p><small>Project Location</small> Prepared by DL on 2020-09-24  <small>Ballona Creek</small> TR by ST on 2020-09-24  <small>Los Angeles County, California</small> IR by JV on 2020-09-24</p> <p><small>Client/Project</small> 184031268          Los Angeles County Public Works          Ballona Creek Trash Interceptor Pilot Project          Biological Resources Technical Report</p> <p><small>Figure No.</small>  <b>2</b></p> <p><small>Title</small>  <b>Vegetation Communities &amp; Land Cover Types</b></p>
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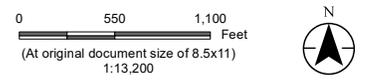
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- Biological Survey Area
- Existing Bikeways
- Project Footprint**
- Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
- Mooring Footprint [0.113 Acres]
- Trash Boom
- Mooring Line
- Interceptor Assembly Area [0.62 Acres]
- Mooring Construction Staging Areas [0.37 Acres]

- Soils Map Unit Symbol**
- 1100; Urban land, 0 to 2 percent slopes, dredged fill substratum
  - 1150; Abaft-Beaches complex, 0 to 5 percent slopes
  - 1153; Urban land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced
  - W; Water

- Notes**
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020, NRCS 2020.
  3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
  4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft



**Stantec**

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*Project Location* Ballona Creek  
Los Angeles County, California

*Prepared by* DL on 2020-09-25  
TR by JV on 2020-09-25  
IR by ST on 2020-09-25

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*Client/Project* Los Angeles County Public Works  
Ballona Creek Trash Interceptor Pilot Project  
Biological Resources Technical Report

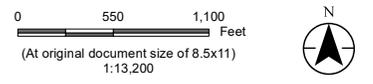
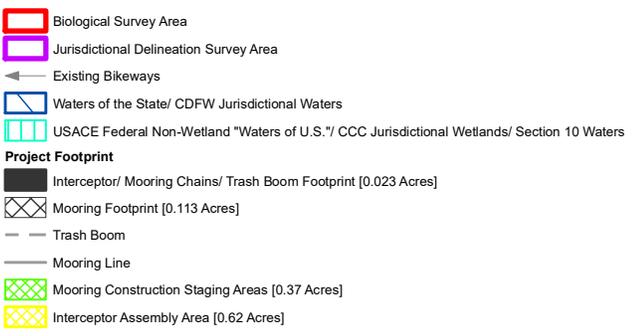
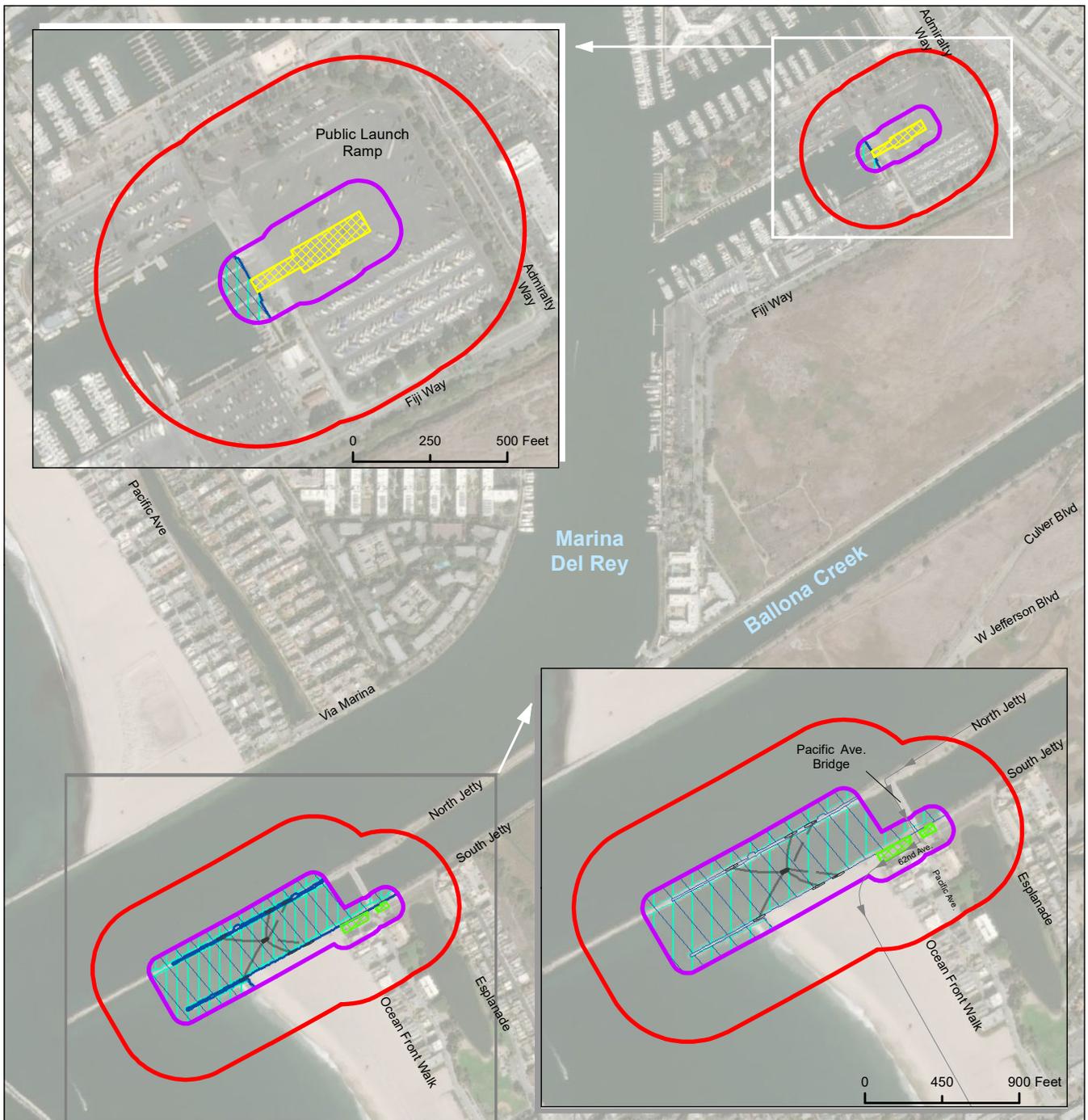
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*Figure No.* 184031268  
**3**

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*Title* **Historical Soils**

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**Stantec**

Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-07-16  
 TR by JV on 2020-07-16  
 IR by ST on 2020-07-16

Client/Project: Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

Figure No. 4

Title: Jurisdictional Delineation Map

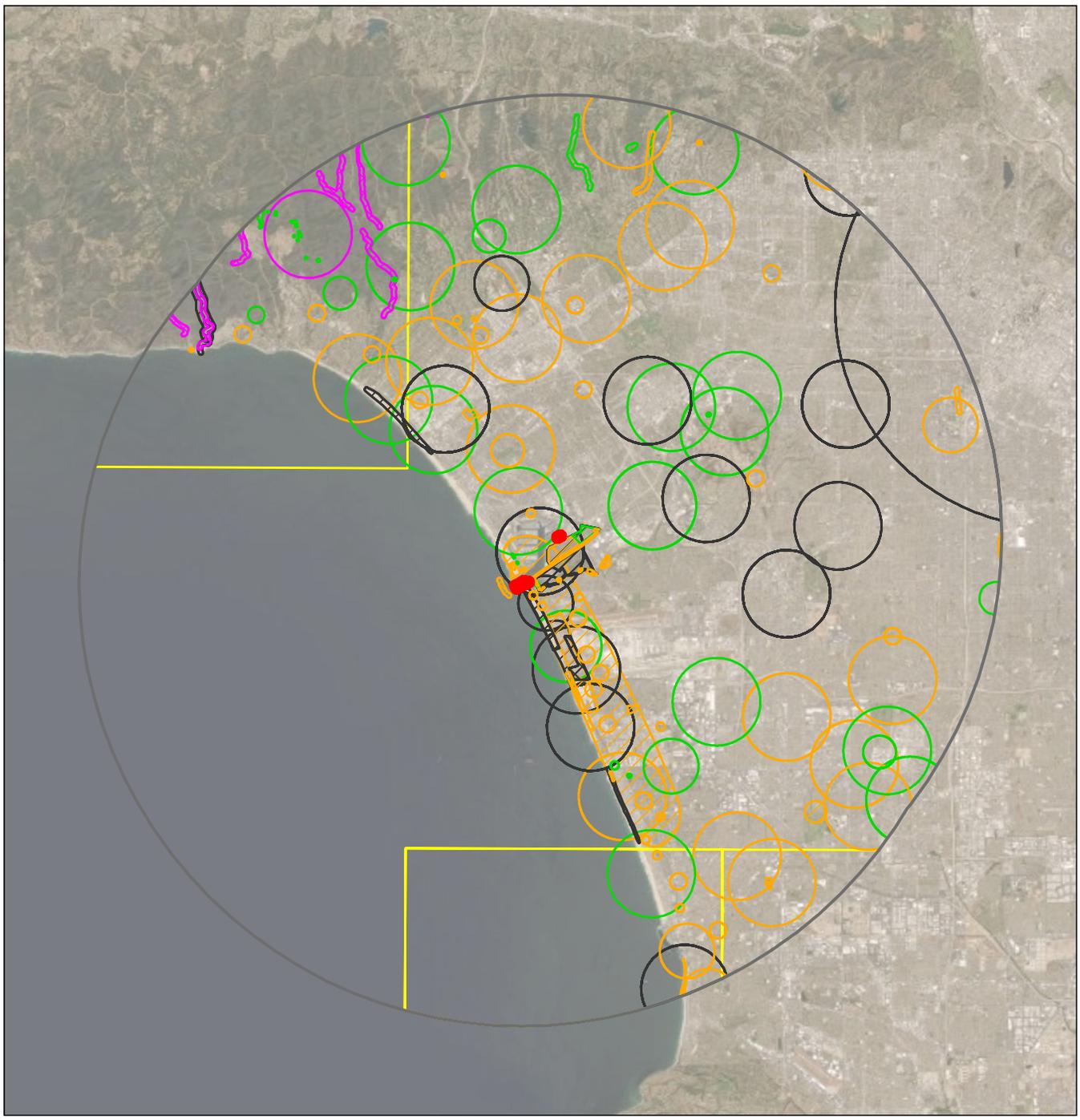
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2. Data Sources: Stantec 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.

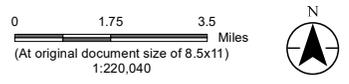
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Biological Survey Area	Animal (non-specific)
10 Search Radius	Animal (circular)
<b>Symbology</b>	Terrestrial Comm. (specific)
Plant (80m)	Terrestrial Comm. (circular)
Plant (specific)	Multiple (specific)
Plant (non-specific)	Multiple (non-specific)
Plant (circular)	Multiple (circular)
Animal (80m)	Sensitive EO's (Commercial only)
Animal (specific)	



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-10-02, TR by JV on 2020-10-02, IR by ST on 2020-10-02

Client/Project: Los Angeles County Public Works, Ballona Creek Trash Interceptor Pilot Project, Biological Resources Technical Report  
 184031268

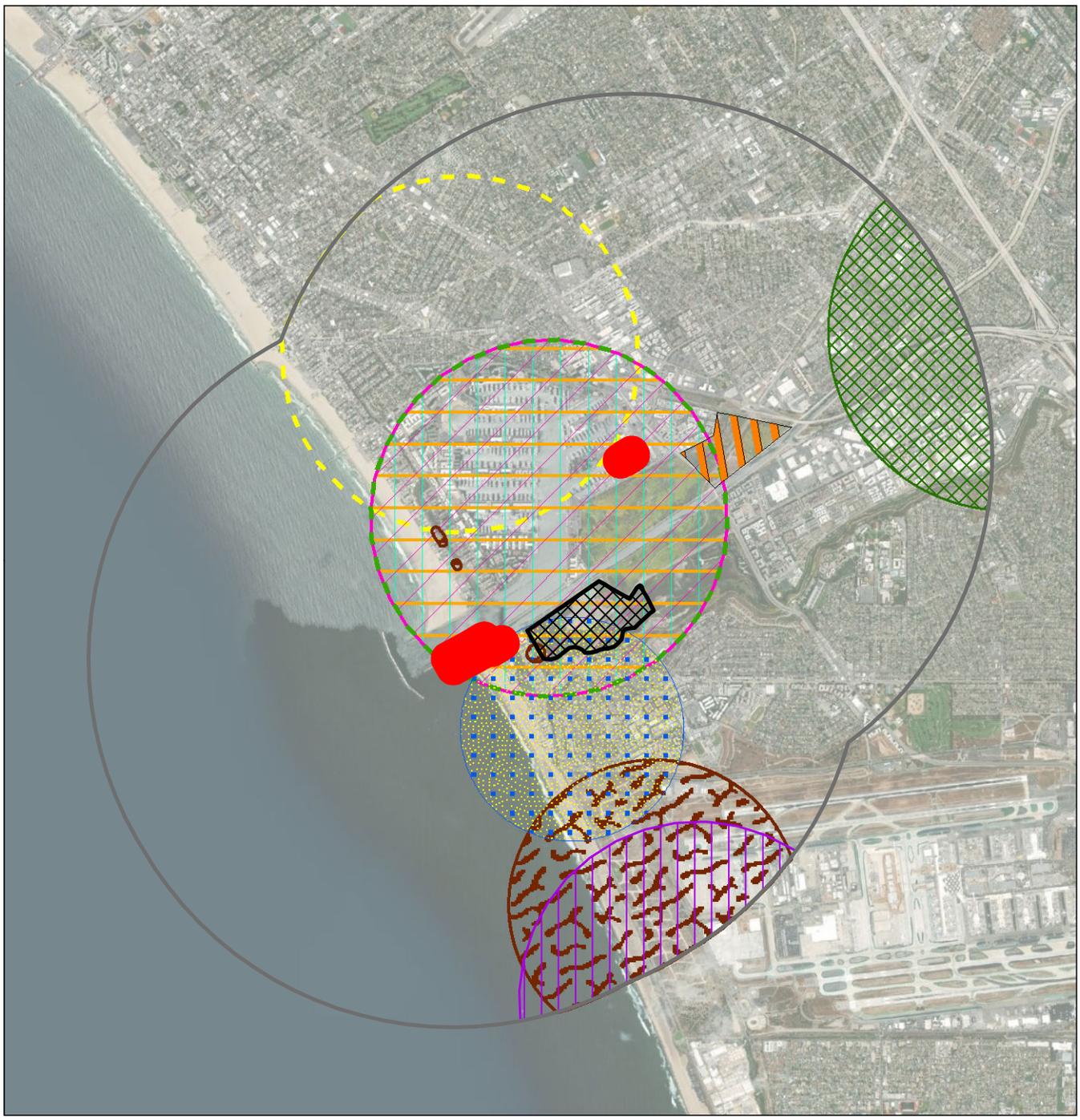
Figure No. **5**

Title **10 Mile CNDDDB Search**

**Notes**  
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 2. Data Sources: Stantec 2020, CNDDDB 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

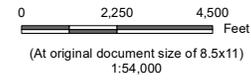
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- Biological Survey Area
- 2 Mile Search Radius
- Plants**
- Ballona cinquefoil
- Brand's star phacelia
- Coulter's goldfields
- Orcutt's pincushion
- San Fernando Valley spineflower

- Ventura Marsh milk-vetch
- beach spectaclepod
- coastal goosefoot
- salt marsh bird's-beak
- southern tarplant
- Habitat**
- Southern Coastal Salt Marsh
- Southern Dune Scrub



*Project Location* Prepared by DL on 2020-09-30  
 Ballona Creek TR by JV on 2020-09-30  
 Los Angeles County, California IR by ST on 2020-09-30

*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

*Figure No.*  
**5a**

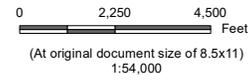
*Title*  
**2 Mile CNDDB Search - Plants**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020, NRCS 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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- |                |   |  |                                     |
|----------------|---|--|-------------------------------------|
|                | Biological Survey Area                          |  | sandy beach tiger beetle            |
|                | 2 Mile Search Radius                            |  | south coast marsh vole              |
| <b>Animals</b> |   |  |                                     |
|                | burrowing owl                                   |  | southern California legless lizard  |
|                | globose dune beetle                             |  | southern California saltmarsh shrew |
|                | least Bell's vireo                              |  | wandering (=saltmarsh) skipper      |
|                | mimic tryonia (=California brackishwater snail) |  | western pond turtle                 |
|                | monarch - California overwintering population   |  | western snowy plover                |



Project Location Prepared by DL on 2020-09-30  
 Ballona Creek TR by JV on 2020-09-30  
 Los Angeles County, California IR by ST on 2020-09-30

Client/Project 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Biological Resources Technical Report

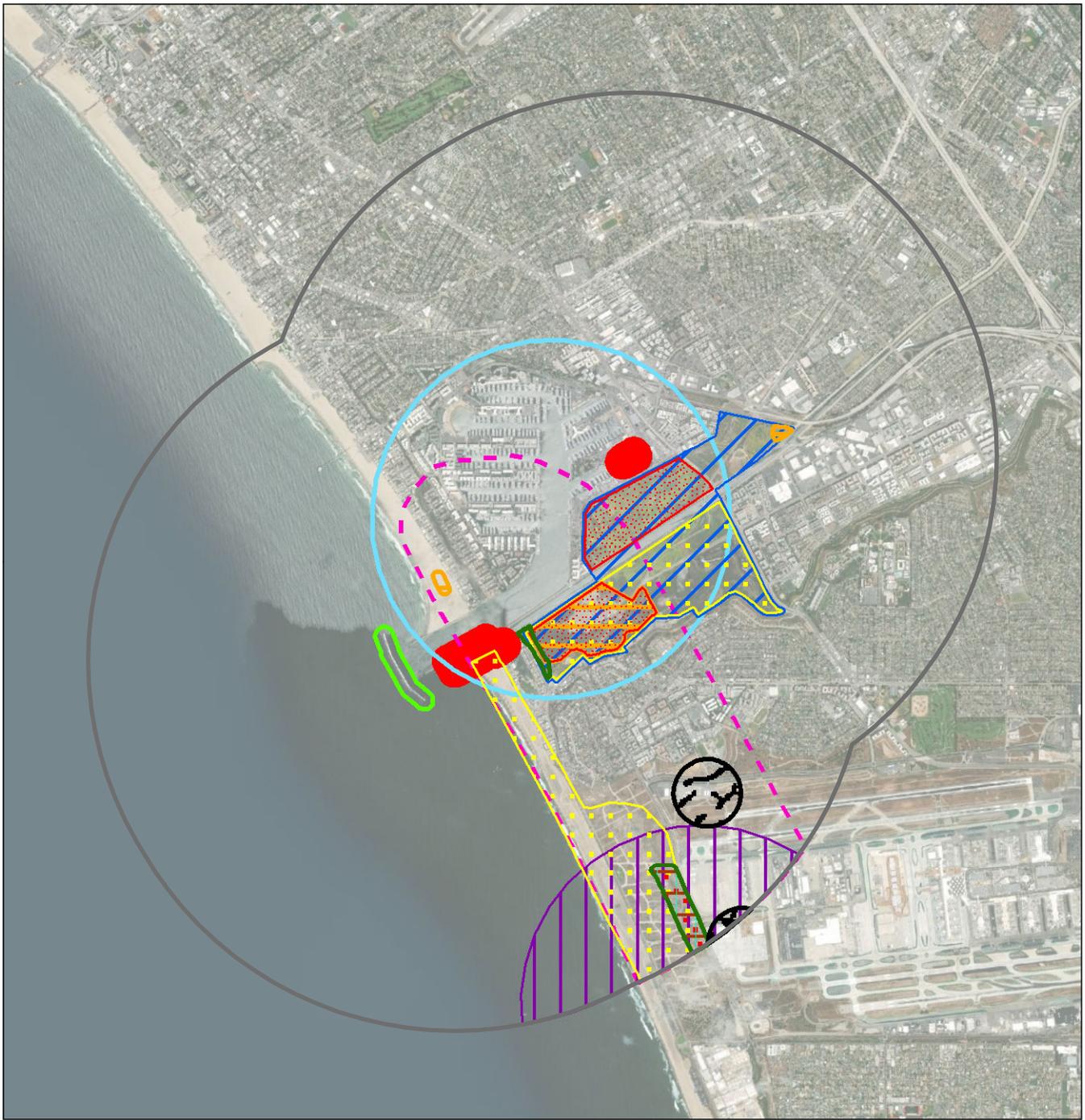
Figure No.  
**5b**

Title  
**2 Mile CNDDDB Search - Animals**

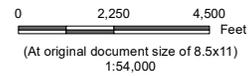
**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020, CNDDDB 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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- |                |                            |  |                                  |
|----------------|----------------------------|--|----------------------------------|
|                | Biological Survey Area     |  | California least tern            |
|                | 2 Mile Search Radius       |  | Crotch bumble bee                |
| <b>Animals</b> |                            |  |                                  |
|                | Belding's savannah sparrow |  | Dorothy's El Segundo Dune weevil |
|                | Belkin's dune tabanid fly  |  | El Segundo blue butterfly        |
|                | Busck's gallmoth           |  | Henne's eucosman moth            |
|                | California black rail      |  | Lange's El Segundo Dune weevil   |
|                | California brown pelican   |  | Pacific pocket mouse             |
|                |                            |  | Riverside fairy shrimp           |



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-30  
 TR by JV on 2020-09-30  
 IR by ST on 2020-09-30

Client/Project: Los Angeles County Public Works Ballona Creek Trash Interceptor Pilot Project Biological Resources Technical Report  
 184031268

Figure No. 5c

Title: 2 Mile CNDDB Search - Animals

- Notes**
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020, NRCS 2020.
  3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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## **Appendix B    PHOTOGRAPHIC LOG**





Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 1	
<b>Direction:</b> North-northeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the manually controlled tidal gate to Ballona Creek and Del Rey Lagoon without water. Tidal gate is operated by the City of Los Angeles Recreation and Parks.	

<b>Photograph ID:</b> 2	
<b>Direction:</b> North-northeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the Del Rey Lagoon with water.	



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 3			
<b>Direction:</b> South			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From south of Ballona Creek looking south at the Del Rey Lagoon. The stand of Invasive Monoculture and Ice Plant Mat Alliance north of the Del Rey Lagoon is depicted.			
<b>Photograph ID:</b> 4			
<b>Direction:</b> West			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> South of Ballona Creek and north of Del Rey Lagoon along the graded path facing west. The photo depicts the ongoing construction south of Pacific Avenue Bridge along 62nd Avenue at Pacific Avenue.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 5			
<b>Direction:</b> West			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern bank of Ballona Creek along the graded path facing west towards the Pacific Avenue Bridge. The photo depicts the high level of bird activity along and within the creek.			
<b>Photograph ID:</b> 6			
<b>Direction:</b> Northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Pacific Avenue Bridge looking upstream at Ballona Creek.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 7			
<b>Direction:</b> Southwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern end of the Pacific Avenue Bridge, looking downstream at Ballona Creek.			
<b>Photograph ID:</b> 8			
<b>Direction:</b> Northwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> Along the northern boundary of the SA (Ballona Creek North Jetty) looking downstream of Pacific Avenue Bridge. This photo depicts Ballona Creek on the left side of the image and Marina del Rey Harbor Main Channel as the main focal point on the right side of the image.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 9			
<b>Direction:</b> Northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> Along the northern boundary of the SA. This photo depicts the paved Ballona Creek Bike Path and Marina del Rey Harbor Main Channel on the left side of the photograph.			
<b>Photograph ID:</b> 10			
<b>Direction:</b> South-southeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek North Jetty adjacent to the Pacific Avenue Bridge. This photo depicts the residential development and boat ramp south of Ballona Creek.			



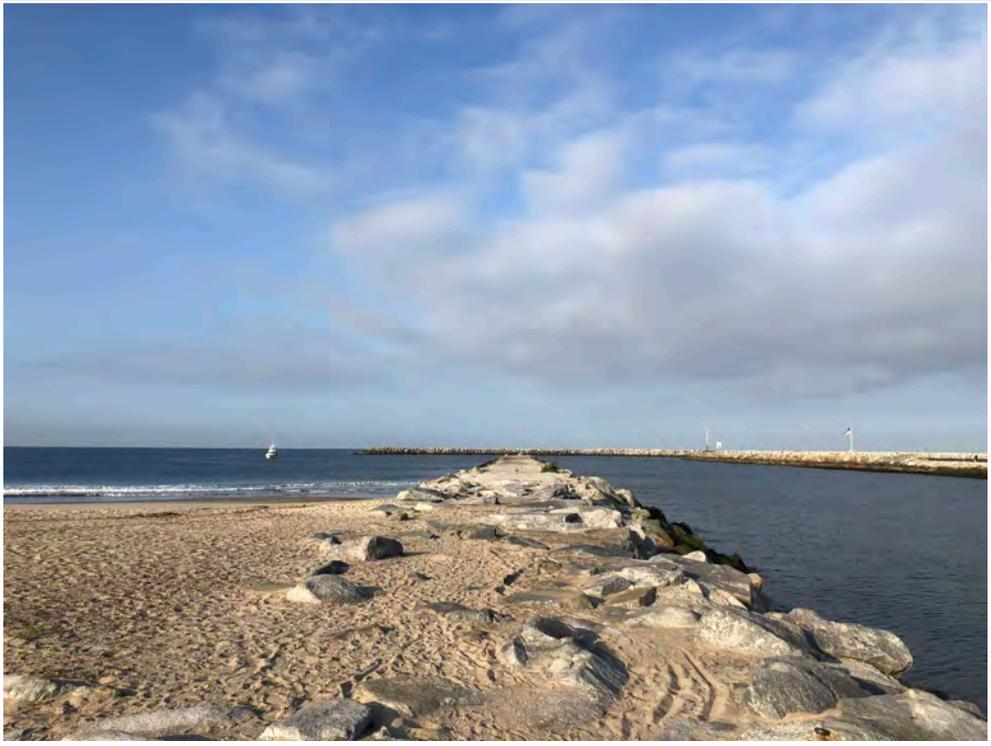
Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 11			
<b>Direction:</b> South-southeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek North Jetty near the western boundary of the SA looking towards Dockweiler State Beach and the residential units along it.			
<b>Photograph ID:</b> 12			
<b>Direction:</b> East-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek South Jetty near the western boundary of the SA looking towards Pacific Avenue Bridge and Playa del Rey residential units along Dockweiler State Beach.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 13	
<b>Direction:</b> West-southwest	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Ballona Creek mouth and South Jetty looking towards Santa Monica Bay.	

<b>Photograph ID:</b> 14	
<b>Direction:</b> Southeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern bank of Ballona Creek looking towards Dockweiler State Beach. The paved bike bath, residential units, and entrance to the lifeguard station are depicted.	

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 15			
<b>Direction:</b> West-southwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> South of Ballona Creek from the Ballona Creek South Jetty facing southwest towards Playa del Rey. The photo depicts the Dune Mat Alliance along the northern margin of Dockweiler State Beach.			
<b>Photograph ID:</b> 16			
<b>Direction:</b> East-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern bank of Ballona Creek looking towards a section of invasive monoculture south of Pacific Avenue Bridge.			



Photographic Log

<b>Client:</b>	<b>Los Angeles County Public Works</b>	<b>Project:</b>	<b>Ballona Creek Trash Interceptor Pilot Project</b>
<b>Site Name:</b>	<b>Ballona Creek</b>	<b>Site Location:</b>	<b>Los Angeles County, CA</b>

<p><b>Photograph ID:</b> 17</p>	
<p><b>Direction:</b> South-southeast</p>	
<p><b>Survey Date:</b> 2/25/2020, 3/2/2020</p>	
<p><b>Comments:</b> From the northernmost margin of Dockweiler State Beach looking towards the beach. The photo depicts the Ice Plant Alliance adjacent to residential units.</p>	



## **Appendix C MARINE BIOLOGICAL TECHNICAL STUDY**



**MARINE BIOLOGICAL ASSESSMENT  
FOR  
THE BALLONA CREEK INTERCEPTOR™ PROJECT  
MARINA DEL REY, CA**

***Prepared for:***

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**October 2020**

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## **1.0 INTRODUCTION**

Public Works is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot project, the Ballona Creek Trash Interceptor™ Pilot Project “Project”, to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ within Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline (Figure 1). The purpose of the Project is to test the efficiency of The Ocean Cleanup’s Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project’s goal is to would capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protecting the environment.

This report documents the in-water marine biological condition at the Project location as well as provides an analysis of potential impacts to habitats and sensitive species. An Essential Fish Habitat (EFH) Assessment for the proposed Project is provided in a separate document.

## **2.0 PROJECT LOCATION AND DESCRIPTION**

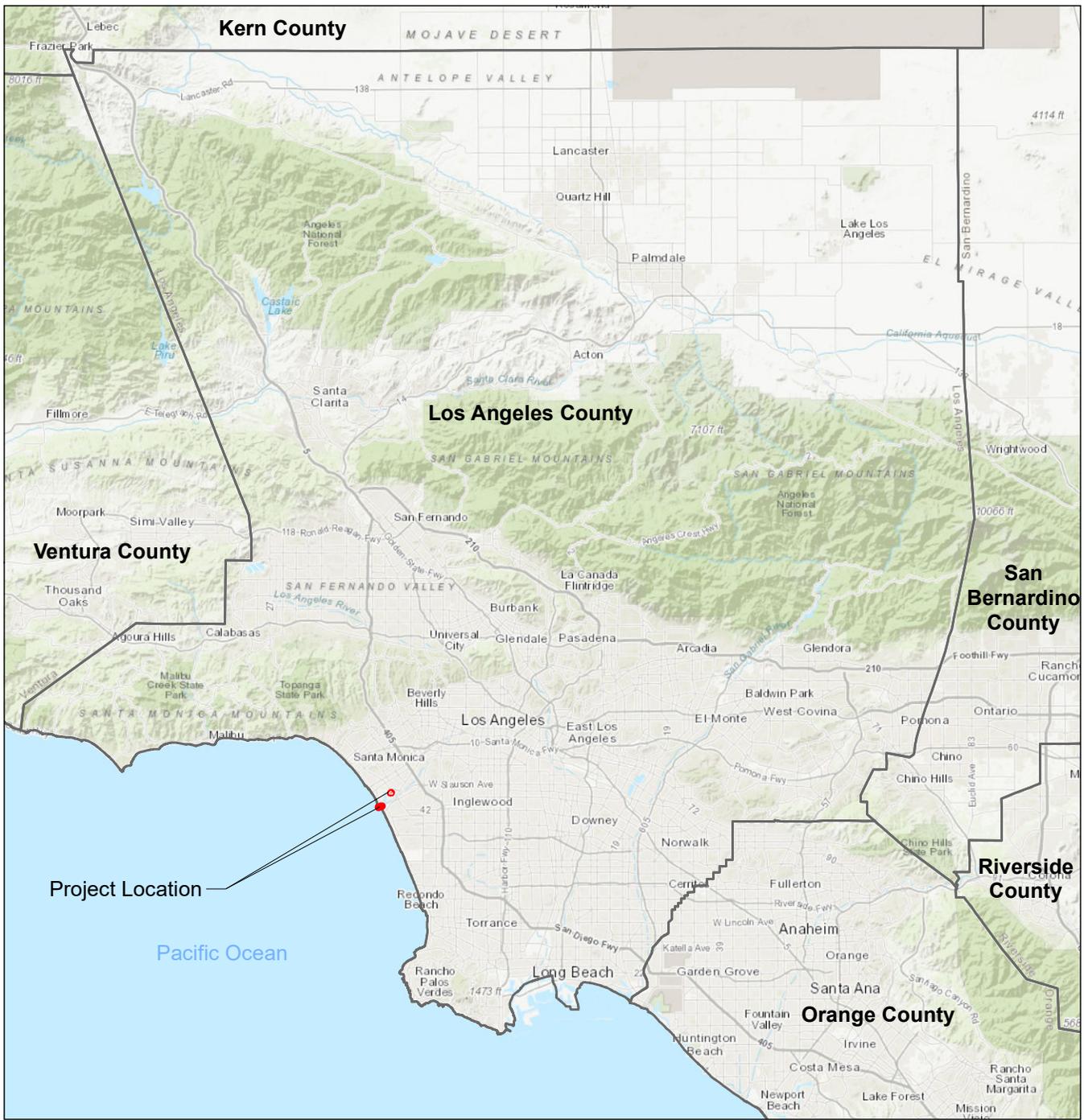
### **2.1 PROJECT LOCATION**

The Project is located within a channelized portion of Ballona Creek, approximately 1.5 miles west of CA-1, 0.5 mile east of the Santa Monica Bay, and immediately southwest of the Ballona Creek-Pacific Avenue Bridge, Marina del Rey South Jetty, and Marina del Rey Harbor Main Channel. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project (Figure 1).

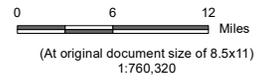
The study area is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats returning to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop with no public access.

### **2.2 PROJECT DESCRIPTION**

The floating Interceptor™ would be a single vessel (Figure 2) moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties (Figure 3). Each mooring would have a concrete pad which would be installed above-grade with the jetty as well as ramps with railings installed and attached to mooring ties to hold the Interceptor™ in place. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™.



■ Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

Figure No.  
**1**

Title  
**Project Location Map**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020.  
 3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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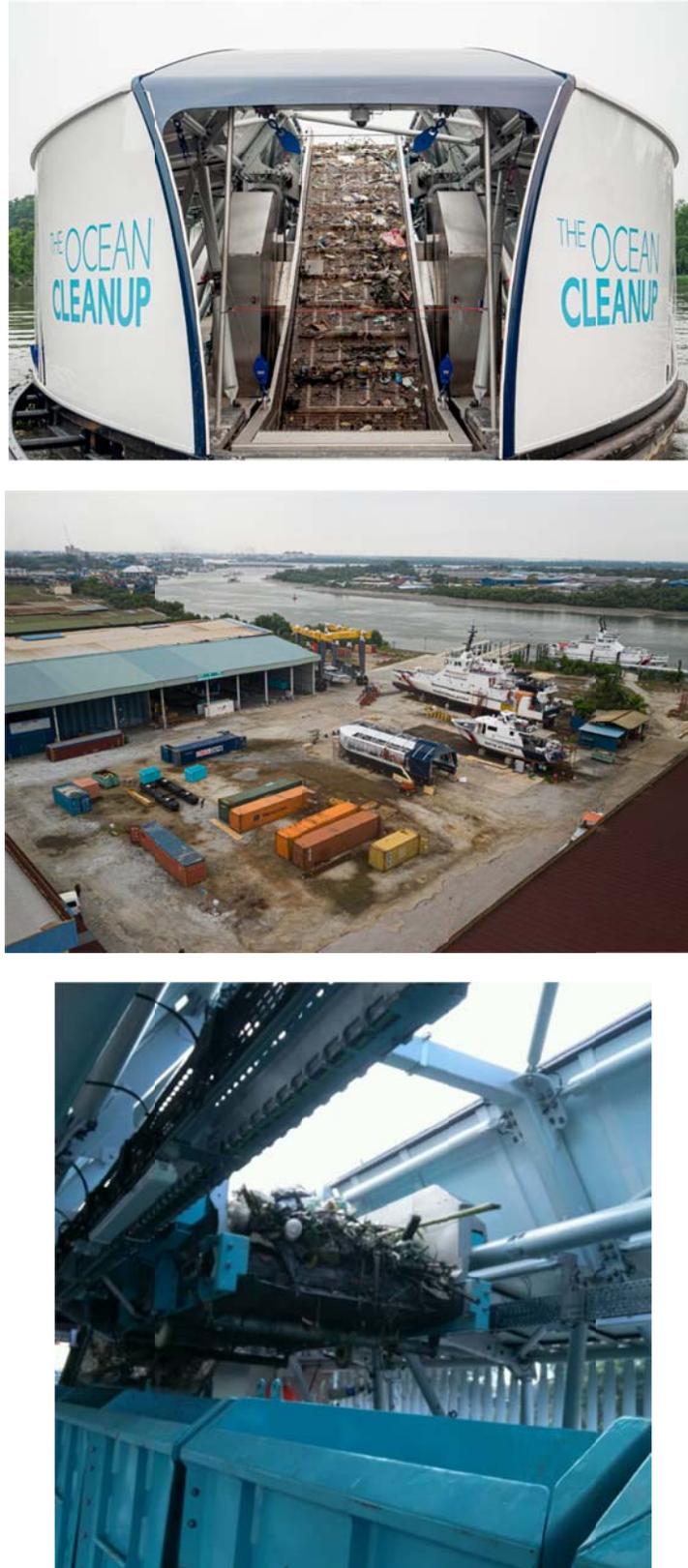


Figure 2. Pictures of Interceptor™ barge in Malaysia with barrier and dumpster barge.



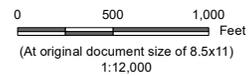
← Existing Bikeways

**Project Footprint**

-  Mooring Footprint [0.113 Acres]
-  Mooring Construction Staging Areas [0.37 Acres]
-  Interceptor Assembly Area [0.62 Acres]
-  Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
-  Trash Boom
-  Mooring Lines

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-28, TR by ST on 2020-09-28, IR by LM on 2020-09-28

Client/Project: Los Angeles County Public Works, Ballona Creek Trash Interceptor Pilot Project Permit Package 184031268

Figure No.

**3**

Title

**Project Vicinity**

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The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ would use both booms during the storm season (October-April), when stormwater flows wash greater amounts of trash and debris into Ballona Creek, and only one boom during the remainder of the year. The southern boom would remain in place while the northern boom would be able to be clipped and unclipped to the Interceptor™ prior to and after storm events. The booms, which would float atop the water would extend 18 inches beneath the water surface, and have a low draft allowing water to pass underneath without significant interference; therefore, not substantially obstructing or diverting the natural flow of water within Ballona Creek. In the event of an emergency, such as higher flow speeds within Ballona Creek, the booms are designed to automatically release and open by detaching from one side of the mooring on top of the jetty.

When the Interceptor™ is nearly full, it automatically sends a message to the local operators to collect the waste. Operators then remove the dumpsters (trash bins), bring them to the side of the Marina del Rey boat harbor, empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpsters back to the Interceptor™. The Interceptor™ pilot program is expected to be deployed and in operation for two storm seasons (up to 24 months).

Construction and installation of the Project would occur over an approximate six-month period. During construction of the moorings, the Ballona Creek North Jetty walkway would be temporarily closed to prevent public access due to safety considerations. Construction of the moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the Project; however, some excavation would be required to remove the existing stone jetty riprap to install the mooring blocks (12 feet wide x 8 feet long). In addition, minor ground disturbance would be required on top of the jetties to allow access for installation of Project components (i.e., Interceptor™ anchoring location, collection boom, and jetty mooring system). Approximately 0.113 acres would be disturbed or developed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings. The Project would involve minimal vehicle trips including material import/ export as well as haul trucks required for construction.

### **3.0 PROJECT REGULATORY REQUIREMENTS**

The proposed project is subject to the following regulations.

#### **3.1 FEDERAL REGULATIONS**

##### **Clean Water Act**

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the CWA, is the major federal legislation governing water quality. The purpose of the federal CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Discharges into waters of the United States are regulated under the CWA. Waters of the United States currently include the territorial seas and traditional navigable waters, perennial and intermittent tributaries

to those waters, certain lakes, ponds, and impoundments, and wetlands adjacent to jurisdictional waters (33 C.F.R. § 328.3). Important applicable sections of the CWA are discussed below:

- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective RWQCB (Regional Water Quality Control Board). A Section 401 permit from the SWRCB (State Water Resources Control Board) or RWQCB would be required for issuance of a permit by the U.S. Army Corps of Engineers (USACE).

### **Rivers and Harbors Appropriation Act**

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403 et seq.), commonly known as the Rivers and Harbors Act (RHA), prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. Under RHA Section 10, the USACE is authorized to permit structures in or over navigable waters. Building or modifying wharves, piers, jetties, and other structures in or over the waters of the United States requires USACE approval through the Section 10 permit process.

In addition, Section 14 (33 U.S.C. § 408), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project.

### **Endangered Species Act**

The Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). The term “harm” is defined as an “act which actually kills or injures wildlife,” including through “significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” The term “harass” means an act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, lead federal agencies are required to consult with the USFWS or NMFS if the lead agency determines that its actions, including permit approvals or funding, may adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency may choose to informally consult with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency may formally consult to ensure full compliance with the ESA.

### **Marine Mammal Protection Act**

The Marine Mammal Protection Act of 1972 (MMPA) prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas and the importation of marine mammals and marine mammal products into the United States. Under the MMPA, “take” is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal” (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal”. NMFS administers the MMPA. Under the 1994 Amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance which:

- **(Level A Harassment)** has the potential to injure a marine mammal or marine mammal stock in the wild; or,
- **(Level B Harassment)** has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) prohibits take of nearly every bird for which members of the bird’s taxonomic family are considered to be migratory. This results in the inclusion of most species of birds afforded protection. Under the MBTA, take means only to kill, directly harm, or destroy individuals, eggs, or nests, or to otherwise cause failure of an ongoing nesting effort.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976 was established to promote domestic and commercial fishing under sound conservation and management principles. NMFS, as a branch of the National Oceanic and Atmospheric Administration (NOAA), implements the act via eight regional Fisheries Management Councils (FMCs). The FMCs in turn prepare and implement Fishery Management Plans (FMPs) in accordance with local conditions. The Pacific FMC is responsible for the Pacific region, in which the study area is located. The FMPs also establish EFH for the species they manage and require consultation by a lead agency with NMFS for actions that may adversely affect EFH. Following receipt of an EFH consultation request, NMFS will provide EFH Conservation Recommendations to the lead agency detailing measures that may be taken by the agency to conserve EFH. Within 30 days of receipt of EFH Conservation Recommendation, the project lead agency must respond in writing, including a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. These measures will be incorporated into the final project.

## **3.2 STATE REGULATIONS**

### **California Coastal Act**

The California Coastal Act (CCA) is intended to provide protection of the unique nature and public interest values of the state’s coastal fringe. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal development permit. The CCA is administered by the California Coastal Commission (CCC) or by local jurisdictions operating under adopted Local Coastal Programs that have been approved by the CCC.

**California Endangered Species Act**

The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050–2098). The CESA defines endangered species as those whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but that may become endangered in the foreseeable future. FGC Section 2080 prohibits the taking of state-listed plants and animals. Unlike the federal ESA, the CESA does not include harassment within its take definition and as such, has a statutorily higher threshold standard for take than does the federal ESA. The California Department of Fish and Wildlife (CDFW) also designates fully protected or protected species as those that may not be taken or possessed without a permit from the California Fish and Game Commission and/or CDFW. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

When a species is both state- and federally-listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination, if take authorization under the CESA is required.

**California Fish and Game Code**

The FGC is implemented by the California Fish and Game Commission, as authorized by Article IV, Section 20, of the Constitution of the State of California. FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. As defined in the Fish and Game Code, “take” means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86). The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. The CDFW oversees the management of marine species through several programs, some in coordination with NMFS and other agencies.

**3.3 LOCAL REGULATIONS****Marina del Rey Land Use Plan**

The Marina del Rey Land Use Plan (LUP) covers the study area, and includes the relevant portion of a local government's general plan, or local coastal element, and are sufficiently detailed to indicate the kinds, location and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of implementing actions (County of Los Angeles 2012). The Marina del Rey LUP covers the study area.

**Marina del Rey Local Coastal Plan**

Local Coastal Program (LCP) means a local government's (a) LUP, (b) zoning ordinances, (c) zoning district maps, and (d) within sensitive coastal resource areas, other implementing actions which, when taken together, meet the requirements of, and implement the provisions and policies of the CCA.

## 4.0 ENVIRONMENTAL SETTING

The description of the environmental setting of the study area is based on physical and qualitative biological surveys conducted in the study area in April 2020, in addition to literature review. The study area is defined as the area that includes all elements of the project as well as the surrounding areas that could potentially be affected by the project. Above water mapping was completed using existing aerial photographs and Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California data. In-water work was completed using interferometric sidescan sonar (ISS), which provided an image of seafloor backscatter within the entire study area. Sidescan backscatter data were acquired at a frequency of 468 kHz, with a scanning range of 31 meters (102 feet) for both the starboard and port channels, resulting in a 62 meters (204-ft) wide swath. All data was collected in latitude and longitude using the North American Datum of 1983 (NAD 83). The survey was conducted by running transects spaced to allow for overlap between adjoining sidescan swaths. Transect surveys were performed until the entirety of the survey area was captured in the survey record. A Remotely Operated Vehicle (ROV) was used to groundtruth targets of interest (substrate, biota) and to photo document. Following completion of the survey, the data was converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the study area. Bathymetric data were processed using standard filtering and used to develop slope and relief maps. Surficial features and mappable habitat types were then digitized by a GIS specialist with expertise in interpreting sonar data for habitat mapping. The GIS specialist inspected the sonar mosaic and delineated habitats and features using ESRI ArcGIS software. Resources of interest were then digitized to show their distribution within the survey area. In addition, a qualitative survey of the rip rap revetment was conducted to note dominant biota. No grab sampling or otter trawls were conducted.

### 4.1 HABITATS WITHIN THE STUDY AREA

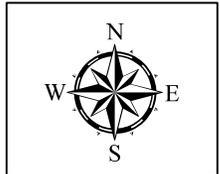
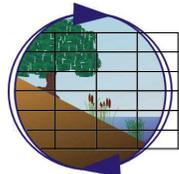
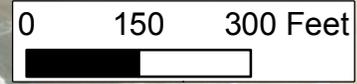
Habitats were delineated into two categories: upland and in-water (or marine), with sub-categories classified if present. They were further differentiated by elevation and/or depth, with upland habitat encompassing the area above +7.8 ft MLLW, intertidal habitat encompassing the area between +7.8 and -2.2 ft MLLW, and subtidal habitat below -2.2 ft MLLW. A summary of the various habitat types within the study area is provided in Table 1, depicted in Figure 4, and described in the following sections.

**Table 1. Habitat summary in study area.**

Category	Elevation	Habitat Type	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Upland	>+7.8 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	3,937	42,377
Marine	Intertidal +7.8 to -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	5,112	55,021
		Unvegetated Soft Bottom	1,629	17,532
		Sub-Total	6,740	72,553
	Subtidal Below -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	1,495	4,934
		Unvegetated Soft Bottom	32,909	354,228
		Debris/Cobble	95	1,028
		Sub-Total	34,499	371,350
Grand Total			45,170	486,208

**Legend**

- Study Area
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 4**

**Upland Area**

The upland area of the study area consists of rip rap revetment with and without concrete fill, and covers approximately 3,937 m<sup>2</sup> (42,377 ft<sup>2</sup>) (Table 1). The area is highly developed, and no special status flora or wildlife species occur in the upland areas (Figure 5).



**Figure 5. Upland area consists of rip rap revetment with and without concrete fill. Left image is north jetty looking downstream; Right image is south jetty looking downstream.**

**Intertidal/Shallow Subtidal Riprap Revetment**

The shoreline along the perimeter of the study area is armored with riprap revetment in the upper intertidal and shallow subtidal zones and covers approximately 6,607 m<sup>2</sup> (71,115 ft<sup>2</sup>) (Table 1 and Figure 5), where it transitions to unvegetated intertidal and shallow subtidal habitat.

Tide level influences the development of the riprap community, and bare rock is more common in the upper intertidal zone. Macroalgae were uncommon in the upper intertidal zone with coverage limited to small amounts of red algal turfs or occasional leafy green algae (*Ulva* sp.). Barnacles (*Balanus*, *Chthamalus*, *Tetraclita*) were abundant in the upper intertidal zone, as well as various limpets (*Lottia* spp.) and snails (*Littorina* sp., *Acanthina spirata*) (Figure 6).

In the mid to low intertidal zone, bare rock was less visible and there was a higher percentage of coralline and other small attached algae (*Chondracanthus* spp., *Ulva* sp., *Corallina* spp., *Mazzaella* spp., *Leathesia* sp., *Petrocelis*, *Gymnogongrus* spp.), in addition to other turf species (Figure 6). Observed invertebrates included sponges, tunicates, tube snails (*Serpulorbis squamigerus*), limpets (*Lottia* spp.), mussels (*Mytilus galloprovincialis*), oysters (*Crassostrea gigas*), and anemones (*Anthopleura* sp.). Similar species were also observed in the shallow subtidal zone, including red algal turfs, encrusting algae, articulated corallines, and sessile invertebrates (Figure 7).



**Figure 6. Shoreline of study area depicting revetment from upper intertidal to shallow subtidal zone.**

### **Subtidal Unvegetated Habitat**

The majority of the study area is considered to be shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt, with areas of accumulated shell hash and debris, and covers approximately 32,909 m<sup>2</sup> (354,228 ft<sup>2</sup>) (Table 1 and Figure 8). Sampling conducted in the Ballona Creek estuary for the Bight '08 Regional Survey noted that the sediment consisted of approximately 56% sand and 44% fines (Table 2; SCCWRP 2011a). In addition, historical sediment quality data indicated that sediments within the tidal reach of Ballona Creek are impacted by metals, pesticides, polycyclic aromatic hydrocarbons (PAHs), and other organic compounds (USACE 2017), and that Total Maximum Daily Loads (TMDLs) for trash, bacteria, and metals in the water column, and for toxics including PAHs, pesticides, and other organic compounds in sediment and fish tissue have been developed to address exceedances of these constituents in Ballona Creek.



Figure 7. Study area transitions from shallow subtidal revetment to unvegetated subtidal habitat.

Table 2. Sediment grain size in Ballona Creek from Bight '08 survey.

Classification	Mean Percent
Total Silt and Clay (less than 0.0625mm)	43.9
Very Fine Sand (0.0625 to 0.125mm)	27.8
Fine Sand (0.125 to 0.25mm)	20.1
Medium Sand (0.25 to 0.5mm)	7.5
Coarse Sand (0.5 to 1mm)	0.7
Very Coarse Sand (1 to 2mm)	0.0
Gravel (greater than 2mm)	0.0



**Figure 8. Unvegetated soft bottom habitat ranged from barren sandy areas to areas with shell hash and debris.**

Organisms that live in soft bottom habitat are referred to as infauna, while those organisms that live on soft bottom habitat are referred to as epifauna. The density (number of individuals per unit area) and species composition of these organisms are influenced by sediment grain size, amount of nutrients, water depth, pollutant levels in the sediments and overlying water, and time since the last disturbance by vessel activity and/or construction, and therefore can serve as an indicator of habitat quality. Several benthic fauna surveys have been conducted within Ballona Creek. Common infaunal organisms recorded in Ballona Creek during the Bight '08 Regional Survey included polychaete worms (*Capitella* sp., *Pseudopolydora* sp., *Polydora* spp., *Neanthes* sp.), amphipods (*Grandidierella* spp., *Mayerella acanthopoda*), and molluscs (*Saxidomus nuttalli*, *Mytilus* sp., Pectinidae, *Musculista senhousia*) (SCCWRP 2012). Benthic epifauna observed during the Bight '08 Regional Survey and other otter trawl sampling noted a variety of organisms including crabs, molluscs, and sea stars (Table 3; M&A 2009, SCCWRP 2011b).

**Table 3. Benthic epifauna observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09
Bivalve	<i>Chione</i> sp.		X
Blackspotted bay shrimp	<i>Crangon nigromaculata</i>	X	
Calico scallop	<i>Argopecten ventricosus</i>		X
California aglaja	<i>Navanax inermis</i>		X
California bubble	<i>Bulla gouldiana</i>		X
Crab	<i>Cancer</i> sp.		X
Hydroid	Hydrozoa	X	
Mediterranean mussel	<i>Mytilus galloprovincialis</i>		X
Northern kelp crab	<i>Pugettia producta</i>		X
Nudibranch	<i>Dendronotus frondosus</i>	X	
Shore crab	<i>Hemigrapsus oregonensis</i>		X
Slender crab	<i>Metacarcinus gracilis</i>	X	
Spider crab	<i>Pyromaia tuberculata</i>	X	X
Spiny sand star	<i>Astropecten armatus</i>	X	
Winged sea slug	<i>Gastropteron pacificum</i>		X

Several fish surveys have been conducted in the Ballona Creek estuary and include the Bight '08 Regional Survey, otter trawl sampling conducted by Merkel & Associates in 2009, and habitat mapping for this project which utilized ROV. The results are summarized in Table 4, and the more common fishes included Round Stingray (*Urobatis halleri*), Spotted Sand Bass (*Paralabrax maculatofasciatus*), Black Croaker (*Cheilotrema saturnum*), Specklefin Midshipman (*Porichthys myriaster*), gobies (Gobiidae), flatfishes (*Paralichthys californicus*, *Pleuronichthys guttulatus*, *Parophrys vetulus*, *Xystreurys liolepis*, *Citharichthys sordidus*, *Pleuronichthys ritteri*) (M&A 2009, SCCWRP 2011b). Although two individual southern California steelhead (*Oncorhynchus mykiss irideus*) were observed in Ballona Creek in 2008 (upstream of the Ballona Reserve), the creek and its tributaries are heavily urbanized and do not provide suitable foraging or spawning habitat (USACE 2017).

#### **Subtidal Vegetated Habitat**

Vegetated subtidal habitats are an essential component of southern California's coastal marine environment. Eelgrass (*Zostera marina*) beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. The survey of in-water habitats completed in April 2020 detected no eelgrass in the shallow waters of the study area.

**Table 4. Fish species observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09	M&A '20
Bay Pipefish	<i>Syngnathus leptorhynchus</i>		X	
Black Croaker	<i>Cheilotrema saturnum</i>		X	
California Halibut	<i>Paralichthys californicus</i>	X	X	
California Lizardfish	<i>Synodus lucioceps</i>	X		
CIQ goby	<i>Clevelandia/Ilypnus/Quietula complex</i>		X	
Diamond Turbot	<i>Pleuronichthys guttulatus</i>		X	
English Sole	<i>Parophrys vetulus</i>	X		
Fantail Sole	<i>Xystreureys liolepis</i>	X	X	
Hornyhead Turbot	<i>Pleuronichthys verticalis</i>	X	X	
Kelp Bass	<i>Paralabrax clathratus</i>			X
Pacific Sanddab	<i>Citharichthys sordidus</i>	X		
Queenfish	<i>Seriphus politus</i>		X	
Roughback Sculpin	<i>Chitonotus pugetensis</i>	X		
Round Stingray	<i>Urobatis halleri</i>		X	
Salema	<i>Xenistius californiensis</i>		X	
Sargo	<i>Anisotremus davidsonii</i>		X	
Shiner Surfperch	<i>Cymatogaster aggregata</i>		X	
Shovelnose Guitarfish	<i>Rhinobatos productus</i>		X	
Speckled Sanddab	<i>Citharichthys stigmaeus</i>	X		
Specklefin Midshipman	<i>Porichthys myriaster</i>	X		
Spotted Bay Bass	<i>Paralabrax maculatofasciatus</i>			X
Spotted Turbot	<i>Pleuronichthys ritteri</i>	X		
Staghorn Sculpin	<i>Leptocottus armatus</i>		X	
Striped Kelpfish	<i>Gibbonsia metzi</i>		X	
Topsmelt	<i>Atherinops affinis</i>		X	X
Yellowfin Croaker	<i>Umbrina roncadore</i>		X	
Zebra Perch	<i>Kyphosus azureus</i>			X

Note: Bight '08 sampling conducted with 25' otter trawl; M&A '09 sampling conducted with 10' otter trawl; M&A '20 sampling conducted with ROV

### **Open Water**

Open water/water column habitat due to its three dimensional component, is the largest habitat type within the study area, and supports pelagic fishes and occasionally marine mammals. A common schooling species observed within the study area is Topsmelt (*Atherinops affinis*), and while not observed, other schooling species such as Northern Anchovy (*Engraulis mordax*) and Sardines (*Sardinops sagax*) may also occur in the area. The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers. These fish also provide an important forage base for predatory fish species.

#### 4.2 WETLANDS AND SENSITIVE HABITATS

Wetlands, as defined by the USACE, are not present within the study area. The nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area.

Eelgrass is a rooted aquatic plant that inhabits shallow soft bottom habitats in quiet waters of bays and estuaries, as well as sheltered coastal areas. It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Eelgrass is considered a Submerged Aquatic Vegetation (SAV), and a “special aquatic site” under the CWA. Pursuant to the MSA, eelgrass is designated as a Habitat Area of Particular Concern (HAPC) within EFH for various federally-managed fish species within the Pacific Coast Groundfish FMP (NMFS 2014a). As noted in the Subtidal Vegetated Habitat section, eelgrass was not detected within the study area in April 2020.

#### 4.3 WILDLIFE CORRIDORS

Ballona Creek provides movement for marine fish species into and out of the study area, and occasionally marine mammals such as California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina richardsi*) have been observed in the Ballona Creek channel (USACE 2017). Several whale species migrate along the coast of California, including the California gray whale (*Eschrichtius robustus*). The peak northward migration of male gray whales occurs in mid-March, followed two months later by the second migration wave, which is composed of cows and calves. Whales typically do not occur in harbors like Marina del Rey or estuaries like Ballona Creek (USACE 2017). While mobile animals make use of the creek mouth, it is not considered a wildlife corridor (USACE 2017).

#### 4.4 SENSITIVE WILDLIFE

Table 5 lists sensitive animal species with the potential and likelihood to occur within the study area. Only two species listed by USFWS and/or CDFW as federally or state endangered or threatened have the potential to occur within the study area: the federally endangered steelhead and federally threatened green sea turtle (*Chelonia mydas*). While two steelhead were observed upstream of the study area in Ballona Creek in 2008, the upstream habitat was considered low quality, providing limited foraging, spawning or rearing habitat (USACE 2017). Further, subsequent surveys have not detected steelhead within Ballona Creek (USACE 2017).

Green sea turtles are known to occur in the warm water discharge of a Long Beach power plant, but are rarely sighted in Santa Monica Bay. Due to lack of required water temperatures, food sources, and nesting habitat within Ballona Creek they are unlikely to regularly occur in the study area.

Finally, several species of marine mammals which are protected by the MMPA may occur in the study area (Table 5). California sea lion (*Zalophus californianus californianus*) and, to a lesser extent, Pacific harbor seal (*Phoca vitulina richardsi*) are the two most common species of marine mammals that occur within harbors and bays. California sea lion and Pacific harbor seal may occasionally be observed in the vicinity of the study area, but are not expected to utilize the area. Dolphins and whales are not anticipated to be present within the study area (USACE 2017).

**Table 5. Sensitive species with potential to occur within the study area.**

Common Name	Scientific Name	Status	Occurrence in Study Area
<b><u>Fish</u></b>			
Southern California Steelhead	<i>Oncorhynchus mykiss irideus</i>	FE; SSC; S1	Very Low Potential - Migrate into fresh water streams when sandbars breach during winter and spring rains. Occur in coastal streams with water temperatures < 15°C. Need cool, clear water with in-stream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean. Spawning habitat consists of gravel substrates free of excessive silt. In 2008, observed in Ballona Creek approximately 2.5 miles upstream of the Marina Freeway overpass; however, focused aquatic surveys from 2009-2011 have not detected this species on the study area. No spawning habitat available in Ballona Creek (USACE 2017).
<b><u>Reptiles</u></b>			
Green Sea Turtle	<i>Chelonia mydas</i>	FT; S1	Very Low Potential - Inhabits coastal areas for benthic feeding and beaches for nesting. In the eastern North Pacific, green sea turtles have been sighted from Baja California to southern Alaska. While turtles commonly occur from San Diego southward, they have an established population at the San Gabriel River estuary and Los Cerritos Wetlands, 30 miles to the south. Rare sightings are reported in Ballona Creek (USACE 2017).
<b><u>Marine Mammals</u></b>			
Pacific Harbor Seal	<i>Phoca vitulina richardsi</i>	MMPA	Low Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
California Sea Lion	<i>Zalophus californianus californianus</i>	MMPA	Moderate Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
Coastal Bottlenose Dolphin	<i>Tursiops truncatus</i>	MMPA	Low Potential – Highly mobile within the inshore waters of Santa Monica Bay (Fandel et al. 2015).
California Gray Whale	<i>Eschrichtius robustus</i>	MMPA	Very Low Potential – Regular migrant in offshore waters, but uncommon in bay and nearshore waters.

**Notes:** FE – Federally Endangered; FT – Federally Threatened; MMPA – species protected by the Marine Mammal Protection Act; SSC – CDFW Species of Special Concern; S1 – Critically Imperiled - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

## 5.0 IMPACT ANALYSIS

The study area is similar to other developed shallow embayments and estuaries located in coastal areas in the Southern California Bight with regard to distribution of habitats and biological features. This analysis focuses on stressors associated with the proposed project elements (i.e., upland construction, vessel operations, and shading) and their potential impact to biological resources including in-water habitat (i.e., intertidal/shallow subtidal riprap revetment, unvegetated subtidal habitat, open water), upland habitat, wildlife corridors, and sensitive species within the study area. As noted in the project description, no in-water construction (e.g., dredging, filling, pile driving) is proposed, and the potential stressors from the proposed project include:

- Mooring construction (in upland area)
- Barge placement
- Barge maintenance operations

Since it is anticipated that elements of the project will be phased, the impacts are analyzed by habitat type and based on the potential stressor.

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region (Santa Monica Bay), the sensitivity of the resource to activities associated with the proposed project, and the duration or ecological ramifications associated with the effect. Per California Environmental Quality Act (CEQA) Guidelines, Section 15000 et seq., impacts are considered significant if they would result in:

- Degradation of critical habitat or reduction in the population size of a listed species (threatened or endangered);
- Degradation of rare or biologically valuable habitat;
- A measurable change in ecological function within the project vicinity;
- A measurable change in species composition or abundance beyond that of normal variability;
- A substantive loss of water surface area through fill or surface water coverage as a result of permanent structures such as docks, wharves, and permanently moored vessels. Small structures such as moorings, navigational aids, individual or widely spaced piles do not result in a substantive loss of water area; or
- An obstruction or alteration of circulation patterns that result in a discernable degradation of water mixing, circulation, or flushing to the extent that biota would be negatively affected in the system.

Impacts to habitats and wildlife can be measured as direct and/or indirect, as well as permanent or temporary. Direct impacts are those that have a direct impact on habitats or wildlife and occur contemporaneously with the action. Direct impacts of in-water construction to wildlife include immediate physical and physiological impacts such as abrupt changes in behavior, flight response, diving, evading, flushing, cessation of feeding, and physical impairment or mortality. Direct impacts to habitats can include damage from construction activities, as well as permanent habitat loss due

to project construction. In contrast, indirect impacts are effects that are caused by or will result from the proposed action at a later time, but are still reasonably certain to occur.

### 5.1 UPLAND AREA IMPACTS

The proposed project consists of construction of six concrete mooring/anchoring pads with each pad covering approximately 76 m<sup>2</sup> (820 ft<sup>2</sup>) for a total construction footprint of approximately 457 m<sup>2</sup> (4,920 ft<sup>2</sup>) on top of the existing rip rap revetment (Table 6 and Figure 9). The construction footprint consists of rip rap revetment with and without concrete fill and supports no special status wildlife or flora species or sensitive habitat. Therefore, temporary impacts on upland habitat are expected, but no significant impacts to biological resources on upland habitat are anticipated from the implementation of the proposed project.

**Table 6. Impact summary for marine habitats.**

Project Element	Category	Habitat Type	Nature of Impact	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Mooring Footprint	Upland Habitat	Man-Made Structure (Rip-Rap Revetment)	Construction/ Fill	457	4,920
Interceptor™ Tie Down	Marine Habitat	Unvegetated Soft Bottom	Shading	385	36
Interceptor™ Footprint	Marine Habitat	Unvegetated Soft Bottom	Surface Cover/ Shading	56	603

### 5.2 IN-WATER HABITAT IMPACTS

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

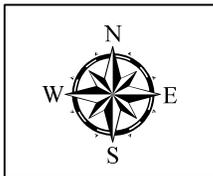
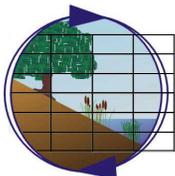
The mooring platforms placed on top of the rip rap revetment will be used to stabilize the Interceptor™ with chain (Figure 3). The chain is anticipated to run just below the waterline but would not rest on the seafloor, and the two upstream platforms would anchor the floating trash booms that would funnel waste to the Interceptor™ barge. The project will not directly impact the intertidal/shallow subtidal revetment, and therefore, no impacts on intertidal/shallow subtidal revetment habitat are expected, and no significant impacts to biological resources associated with intertidal/shallow subtidal revetment are anticipated from the implementation of the proposed project.

#### **Intertidal and Subtidal Unvegetated Habitat**

Barge placement and tie downs would have a direct impact to approximately 92 m<sup>2</sup> (989 ft<sup>2</sup>) of intertidal and subtidal unvegetated habitat including the associated benthic community due to shading (Table 6 and Figure 9). Since the barge is floating, there would be no direct loss or mortality of any benthic infauna and epifauna within the barge footprint, and since eelgrass is not present, no shading impacts to eelgrass would occur. The impact area is relatively small and there is considerable similar soft bottom habitat immediately adjacent to the project footprint, and therefore, impacts associated with barge placement are considered less than significant.

### Legend

- Study Area
- Interceptor Tie Downs
- Interceptor Footprint
- Mooring Footprint
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions and Project Elements**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 9**

In addition, the barge would result in a 56 m<sup>2</sup> (603 ft<sup>2</sup>) increase of surface area coverage; an increase in surface cover would decrease open water habitat (Table 6). This would decrease the foraging habitat available for piscivorous avian species, although given the relatively small areas affected, this increase in surface coverage would not be considered significant.

### **Subtidal Vegetated Habitat**

No eelgrass vegetated habitat was detected in the study area and therefore, no impacts are expected.

### **Open water**

Since no in-water construction activities are proposed, effects from construction such as temporary and localized increases in turbidity and sedimentation within the water column, or noise (enonification) which can result in temporary and or permanent impacts to organisms in the water are not expected. With respect to noise, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected. During construction, the Project would only require the use of some equipment (e.g. saws, generators, air compressors, pump, cement mixers) along the adjacent jetty, not within the Ballona Creek channel. Accordingly, given existing noise and vessel traffic disturbance, a short term installation period, minimal noise associated with the solar-powered operation of the water flow-through system the Project is not expected to create long-term noise disturbance or cause associated harm to organisms in the water column. And given the location of the project, it is anticipated that water velocities will be tidally and storm driven, and that the placement of the barge and barriers would not meaningfully alter water velocities, sedimentation rates, or circulation patterns in the study area. As noted above, the proposed project would temporarily result in an increase of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>) of surface area coverage (Table 6). This increase in surface coverage (or loss of open water habitat) is not expected to affect foraging by piscivorous avian species and is not considered significant.

### **5.3 IMPACTS TO WETLANDS AND SENSITIVE HABITATS**

As described above, the nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area. The proposed project would not alter water flow or water quality to marsh habitat, and is not anticipated to degrade marshlands in any way. Therefore no significant impacts to wetlands are anticipated to occur.

Eelgrass beds are considered to be a sensitive habitat and “special aquatic site” under the CWA and are designated as EFH, and as noted in the Subtidal Vegetated Habitat section, no eelgrass was present within the study area and therefore, no impacts to eelgrass habitat are anticipated to occur.

### **5.4 IMPACTS TO ESSENTIAL FISH HABITAT**

As part of the EFH consultation process, the guidelines require Federal action agencies to prepare a written EFH Assessment describing the effects of that action on EFH (50 CFR 600.920(e)(1)). The EFH Assessment is a necessary component for efficient and effective consultations between a federal action agency and NMFS. In the case of the project, work proposed would require

permitting under Section 10 of the RHA. For this permit action, the USACE is the lead federal action agency. An EFH Assessment for the proposed project is provided in a separate document.

## **5.5 IMPACTS TO WILDLIFE CORRIDORS**

As described above, the study area does not provide any specific wildlife movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. Consequently, impacts of the proposed project on wildlife corridors, movement of resident and migratory species, and usage of nursery sites are considered to be less than significant.

## **5.6 IMPACTS TO SENSITIVE WILDLIFE**

Table 5 provides a summary of sensitive animal species that have potential to occur within the study area. The following text expands on the likelihood of occurrence for these species, and describes potential impacts to sensitive species that may result from project implementation.

### **Fish**

Although two southern California steelhead were observed in Ballona Creek in 2008, this species is expected to have a less than reasonable likelihood of occurring due to the lack of suitable conditions, the species not being detected during recent surveys, and the study area being outside their known range, and therefore no impacts to steelhead are expected from the proposed project.

### **Reptiles**

Environmental threats to sea turtle populations include contamination from coastal runoff, plastic and other debris, fueling facilities, marina and dock construction, dredging, aquaculture, oil and gas exploration and extraction, and increased underwater noise and boat traffic that can degrade marine habitats used by marine sea turtles. As described in Section 5.2 above, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected for local species. Sea turtles swimming or feeding at or just beneath the surface of the water are particularly vulnerable to boat and vessel strikes, which can result in serious propeller injuries and death. Potential impacts to green sea turtle from the proposed project are primarily related to construction activities associated with barge placement and vessel traffic. Protective measures included in the project to minimize impacts to sea turtles include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to sea turtles are considered to be less than significant.

### **Marine Mammals**

Harbor seals and California sea lions are commonly observed in Santa Monica Bay. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the study area or vicinity, although they may make occasional transient use of the area. No in-water construction is anticipated, but vessel traffic will occur during barge placement and maintenance, and any marine mammals would be expected to leave the site for adjacent waters if disturbed by project activities. However, the MMPA prohibits “take” of marine mammals. The definition of “take” under the MMPA, like that of the ESA, includes “harassment”. For this reason, a potentially significant impact to marine mammals could occur if animals are disturbed during project activities, even if they are not harmed by the activities.

Similar to sea turtles, potential impacts to marine mammals from the proposed project are primarily related to project activities associated with vessel traffic. Marine mammals could be struck by boats or boat motors at the study area. In addition, boat noise generated during the installation period and operational activities, as well as, noise associated with the solar-powered operation of the water flow-through system are not expected to impact marine mammals or sea turtles. However, protective measures included in the project to minimize impacts to marine mammals include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to marine mammals are considered to be less than significant.

## 5.7 CUMULATIVE IMPACTS

Cumulative effects are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts can be derived from a single project or a number of separate projects, and is further defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Based on the definitions provided under CEQA, the following analysis assumes that a significant adverse cumulative biological resources impact would occur where the construction or operation of the cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, result in loss or fragmentation of sensitive habitats, or affect the functionality of a planned conservation area. As discussed above, no significant impacts to sensitive habitats or biological resource from the proposed project are anticipated, and any potential impacts to sensitive animals are reduced to less than significant by incorporation of protective measures during construction.

## 6.0 MITIGATION AND PROTECTIVE MEASURES

### 6.1 MARINE RESOURCE MITIGATION

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal rip rap revetment habitat since no in-water construction is proposed.

#### **Intertidal and Subtidal Unvegetated Habitat**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal unvegetated habitat since no in-water construction is proposed.

#### **Subtidal Vegetated Communities**

Based on current project design, no mitigation would be required for eelgrass since no eelgrass is present within the study area.

#### **Surface Coverage**

Based on current project design, no mitigation would be required for surface coverage since the project would result in a temporary small increase in surface coverage of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>).

### **Open Water**

Based on current project design, no mitigation would be required for open water habitat since no in-water construction is proposed.

## **6.2 SENSITIVE SPECIES MITIGATION**

### **Reptiles**

To mitigate potential impacts to eastern Pacific green sea turtles to a less than significant level, the following measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

### **Mammals**

To mitigate potential impacts to marine mammals to a less than significant level, the following construction measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

## **7.0 CONCLUSIONS**

The proposed project would be expected to result in limited impacts to in-water biota and habitats found in the study area. Construction is limited to upland construction in an urbanized area, with no in-water construction proposed, although it is anticipated that tug boats would be used for barge placement and maintenance, including the installation of mooring chain which is anticipated to run just below the waterline but not along the seafloor. Any impact associated with barge placement is anticipated to be of a short-term, temporary nature and is not expected to have permanent or population-level impact to sensitive habitat or species, EFH, or managed fish species. One potential impact may occur to marine reptiles (e.g., sea turtles) and marine mammals (e.g., California sea lion and harbor seal) which could be struck by boats or boat motors at the study area. Any disturbance to sea turtles or marine mammals is considered harassment and would be significant. While it is unlikely that sea turtles or marine mammals would occur in the study area, incorporation of the protection measures listed above would reduce any impacts to less than significant. No significant impacts to wetlands, upland habitat, wildlife migration or corridors are anticipated. Cumulative impacts are considered to be less than significant.

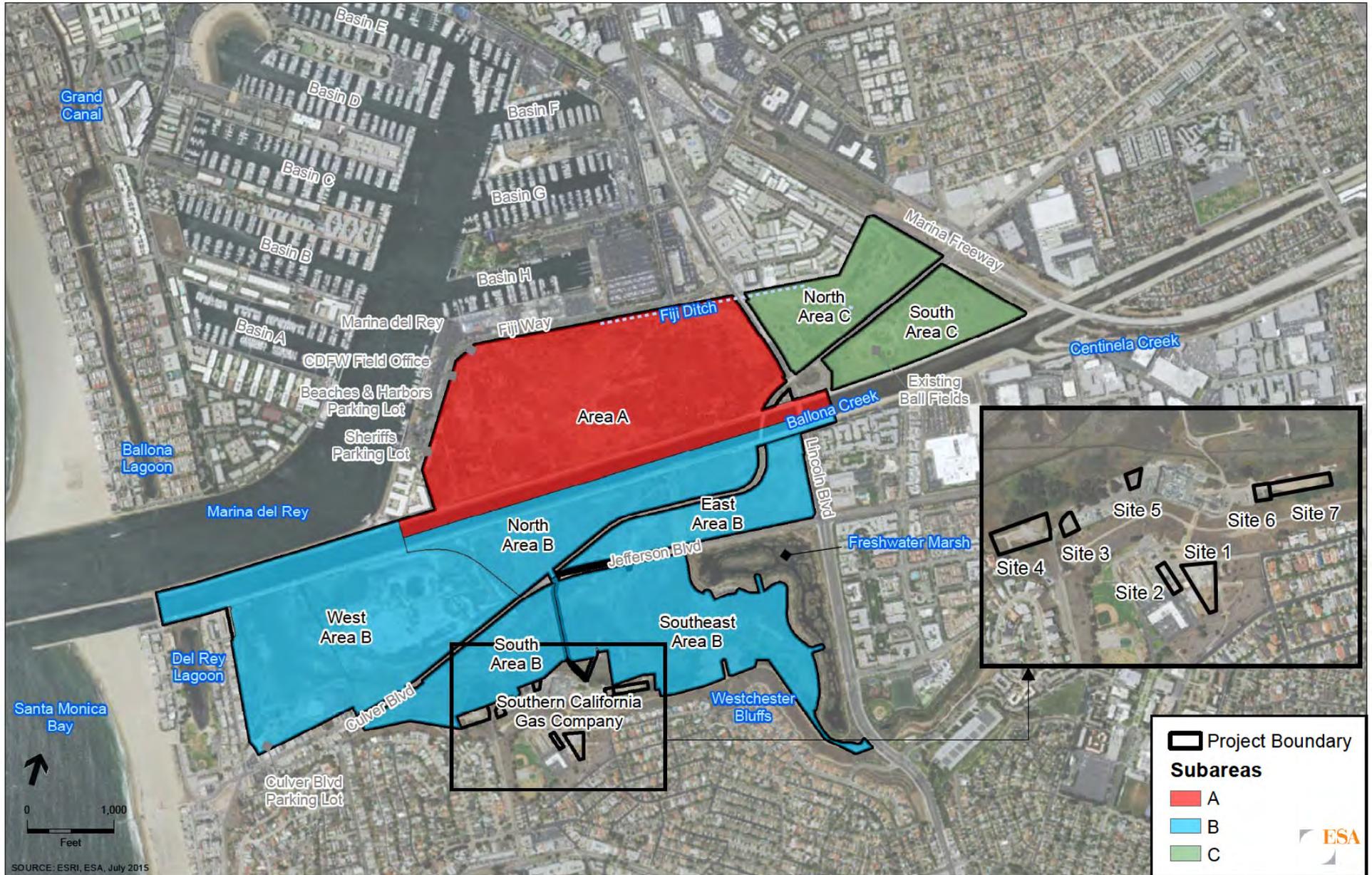
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**Appendix D BALLONA WETLANDS ECOLOGICAL RESERVE  
MAP AND BOUNDARIES**





## **Appendix B MARINE RESOURCES TECHNICAL REPORT**

**MARINE BIOLOGICAL ASSESSMENT  
FOR  
THE BALLONA CREEK INTERCEPTOR™ PROJECT  
MARINA DEL REY, CA**

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**October 2020**

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## **1.0 INTRODUCTION**

Public Works is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot project, the Ballona Creek Trash Interceptor™ Pilot Project “Project”, to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ within Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline (Figure 1). The purpose of the Project is to test the efficiency of The Ocean Cleanup’s Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project’s goal is to would capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protecting the environment.

This report documents the in-water marine biological condition at the Project location as well as provides an analysis of potential impacts to habitats and sensitive species. An Essential Fish Habitat (EFH) Assessment for the proposed Project is provided in a separate document.

## **2.0 PROJECT LOCATION AND DESCRIPTION**

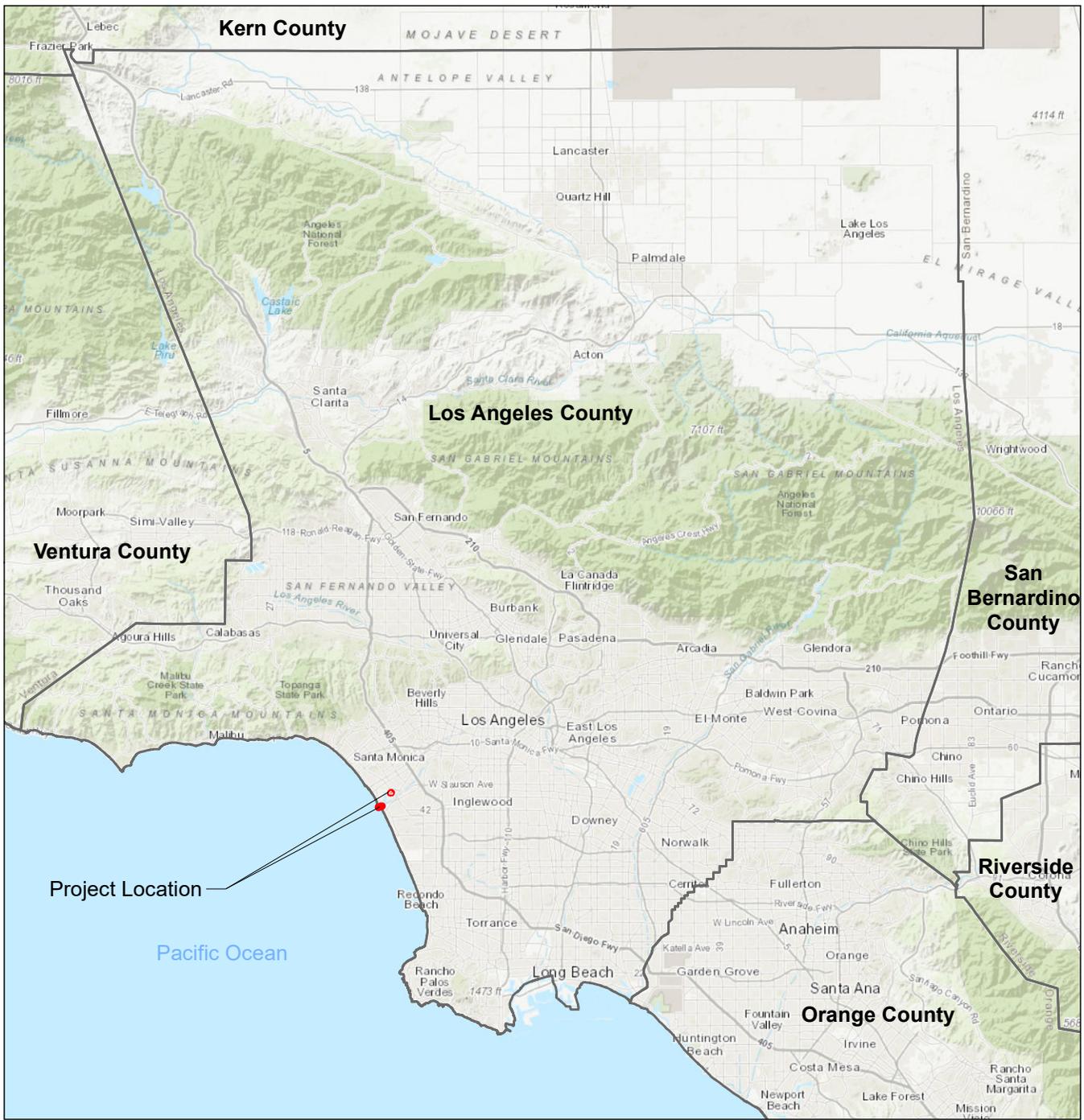
### **2.1 PROJECT LOCATION**

The Project is located within a channelized portion of Ballona Creek, approximately 1.5 miles west of CA-1, 0.5 mile east of the Santa Monica Bay, and immediately southwest of the Ballona Creek-Pacific Avenue Bridge, Marina del Rey South Jetty, and Marina del Rey Harbor Main Channel. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project (Figure 1).

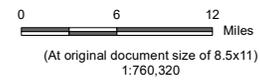
The study area is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats returning to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop with no public access.

### **2.2 PROJECT DESCRIPTION**

The floating Interceptor™ would be a single vessel (Figure 2) moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties (Figure 3). Each mooring would have a concrete pad which would be installed above-grade with the jetty as well as ramps with railings installed and attached to mooring ties to hold the Interceptor™ in place. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™.



 Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

*Figure No.*  
**1**

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Data Sources: Stantec 2020.
  3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
- Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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Figure 2. Pictures of Interceptor™ barge in Malaysia with barrier and dumpster barge.



← Existing Bikeways

**Project Footprint**

-  Mooring Footprint [0.113 Acres]
-  Mooring Construction Staging Areas [0.37 Acres]
-  Interceptor Assembly Area [0.62 Acres]
-  Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
-  Trash Boom
-  Mooring Lines

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-28  
 TR by ST on 2020-09-28  
 IR by LM on 2020-09-28

Client/Project: Los Angeles County Public Works Ballona Creek Trash Interceptor Pilot Project Permit Package 184031268

Figure No. **3**

Title: **Project Vicinity**

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The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ would use both booms during the storm season (October-April), when stormwater flows wash greater amounts of trash and debris into Ballona Creek, and only one boom during the remainder of the year. The southern boom would remain in place while the northern boom would be able to be clipped and unclipped to the Interceptor™ prior to and after storm events. The booms, which would float atop the water would extend 18 inches beneath the water surface, and have a low draft allowing water to pass underneath without significant interference; therefore, not substantially obstructing or diverting the natural flow of water within Ballona Creek. In the event of an emergency, such as higher flow speeds within Ballona Creek, the booms are designed to automatically release and open by detaching from one side of the mooring on top of the jetty.

When the Interceptor™ is nearly full, it automatically sends a message to the local operators to collect the waste. Operators then remove the dumpsters (trash bins), bring them to the side of the Marina del Rey boat harbor, empty the dumpsters, send off the debris to an appropriate solid waste facility, and return the dumpsters back to the Interceptor™. The Interceptor™ pilot program is expected to be deployed and in operation for two storm seasons (up to 24 months).

Construction and installation of the Project would occur over an approximate six-month period. During construction of the moorings, the Ballona Creek North Jetty walkway would be temporarily closed to prevent public access due to safety considerations. Construction of the moorings would require a small crew size. No excavation activities within Ballona Creek channel is planned for the Project; however, some excavation would be required to remove the existing stone jetty riprap to install the mooring blocks (12 feet wide x 8 feet long). In addition, minor ground disturbance would be required on top of the jetties to allow access for installation of Project components (i.e., Interceptor™ anchoring location, collection boom, and jetty mooring system). Approximately 0.113 acres would be disturbed or developed as part of the Project. Some stockpiles would be placed onsite temporarily during excavation and they would be covered with tarps and/or watered to prevent dust, as required. Some equipment (e.g., saws, generators, air compressors, pump, cement mixer) would be required to install the moorings. The Project would involve minimal vehicle trips including material import/ export as well as haul trucks required for construction.

### **3.0 PROJECT REGULATORY REQUIREMENTS**

The proposed project is subject to the following regulations.

#### **3.1 FEDERAL REGULATIONS**

##### **Clean Water Act**

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the CWA, is the major federal legislation governing water quality. The purpose of the federal CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Discharges into waters of the United States are regulated under the CWA. Waters of the United States currently include the territorial seas and traditional navigable waters, perennial and intermittent tributaries

to those waters, certain lakes, ponds, and impoundments, and wetlands adjacent to jurisdictional waters (33 C.F.R. § 328.3). Important applicable sections of the CWA are discussed below:

- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective RWQCB (Regional Water Quality Control Board). A Section 401 permit from the SWRCB (State Water Resources Control Board) or RWQCB would be required for issuance of a permit by the U.S. Army Corps of Engineers (USACE).

### **Rivers and Harbors Appropriation Act**

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403 et seq.), commonly known as the Rivers and Harbors Act (RHA), prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. Under RHA Section 10, the USACE is authorized to permit structures in or over navigable waters. Building or modifying wharves, piers, jetties, and other structures in or over the waters of the United States requires USACE approval through the Section 10 permit process.

In addition, Section 14 (33 U.S.C. § 408), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the Corps that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a USACE project.

### **Endangered Species Act**

The Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). The term “harm” is defined as an “act which actually kills or injures wildlife,” including through “significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” The term “harass” means an act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, lead federal agencies are required to consult with the USFWS or NMFS if the lead agency determines that its actions, including permit approvals or funding, may adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency may choose to informally consult with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency may formally consult to ensure full compliance with the ESA.

### **Marine Mammal Protection Act**

The Marine Mammal Protection Act of 1972 (MMPA) prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas and the importation of marine mammals and marine mammal products into the United States. Under the MMPA, “take” is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal” (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal”. NMFS administers the MMPA. Under the 1994 Amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance which:

- **(Level A Harassment)** has the potential to injure a marine mammal or marine mammal stock in the wild; or,
- **(Level B Harassment)** has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) prohibits take of nearly every bird for which members of the bird’s taxonomic family are considered to be migratory. This results in the inclusion of most species of birds afforded protection. Under the MBTA, take means only to kill, directly harm, or destroy individuals, eggs, or nests, or to otherwise cause failure of an ongoing nesting effort.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976 was established to promote domestic and commercial fishing under sound conservation and management principles. NMFS, as a branch of the National Oceanic and Atmospheric Administration (NOAA), implements the act via eight regional Fisheries Management Councils (FMCs). The FMCs in turn prepare and implement Fishery Management Plans (FMPs) in accordance with local conditions. The Pacific FMC is responsible for the Pacific region, in which the study area is located. The FMPs also establish EFH for the species they manage and require consultation by a lead agency with NMFS for actions that may adversely affect EFH. Following receipt of an EFH consultation request, NMFS will provide EFH Conservation Recommendations to the lead agency detailing measures that may be taken by the agency to conserve EFH. Within 30 days of receipt of EFH Conservation Recommendation, the project lead agency must respond in writing, including a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. These measures will be incorporated into the final project.

## **3.2 STATE REGULATIONS**

### **California Coastal Act**

The California Coastal Act (CCA) is intended to provide protection of the unique nature and public interest values of the state’s coastal fringe. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal development permit. The CCA is administered by the California Coastal Commission (CCC) or by local jurisdictions operating under adopted Local Coastal Programs that have been approved by the CCC.

**California Endangered Species Act**

The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050–2098). The CESA defines endangered species as those whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but that may become endangered in the foreseeable future. FGC Section 2080 prohibits the taking of state-listed plants and animals. Unlike the federal ESA, the CESA does not include harassment within its take definition and as such, has a statutorily higher threshold standard for take than does the federal ESA. The California Department of Fish and Wildlife (CDFW) also designates fully protected or protected species as those that may not be taken or possessed without a permit from the California Fish and Game Commission and/or CDFW. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

When a species is both state- and federally-listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination, if take authorization under the CESA is required.

**California Fish and Game Code**

The FGC is implemented by the California Fish and Game Commission, as authorized by Article IV, Section 20, of the Constitution of the State of California. FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. As defined in the Fish and Game Code, “take” means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86). The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. The CDFW oversees the management of marine species through several programs, some in coordination with NMFS and other agencies.

**3.3 LOCAL REGULATIONS****Marina del Rey Land Use Plan**

The Marina del Rey Land Use Plan (LUP) covers the study area, and includes the relevant portion of a local government's general plan, or local coastal element, and are sufficiently detailed to indicate the kinds, location and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of implementing actions (County of Los Angeles 2012). The Marina del Rey LUP covers the study area.

**Marina del Rey Local Coastal Plan**

Local Coastal Program (LCP) means a local government's (a) LUP, (b) zoning ordinances, (c) zoning district maps, and (d) within sensitive coastal resource areas, other implementing actions which, when taken together, meet the requirements of, and implement the provisions and policies of the CCA.

#### 4.0 ENVIRONMENTAL SETTING

The description of the environmental setting of the study area is based on physical and qualitative biological surveys conducted in the study area in April 2020, in addition to literature review. The study area is defined as the area that includes all elements of the project as well as the surrounding areas that could potentially be affected by the project. Above water mapping was completed using existing aerial photographs and Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California data. In-water work was completed using interferometric sidescan sonar (ISS), which provided an image of seafloor backscatter within the entire study area. Sidescan backscatter data were acquired at a frequency of 468 kHz, with a scanning range of 31 meters (102 feet) for both the starboard and port channels, resulting in a 62 meters (204-ft) wide swath. All data was collected in latitude and longitude using the North American Datum of 1983 (NAD 83). The survey was conducted by running transects spaced to allow for overlap between adjoining sidescan swaths. Transect surveys were performed until the entirety of the survey area was captured in the survey record. A Remotely Operated Vehicle (ROV) was used to groundtruth targets of interest (substrate, biota) and to photo document. Following completion of the survey, the data was converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the study area. Bathymetric data were processed using standard filtering and used to develop slope and relief maps. Surficial features and mappable habitat types were then digitized by a GIS specialist with expertise in interpreting sonar data for habitat mapping. The GIS specialist inspected the sonar mosaic and delineated habitats and features using ESRI ArcGIS software. Resources of interest were then digitized to show their distribution within the survey area. In addition, a qualitative survey of the rip rap revetment was conducted to note dominant biota. No grab sampling or otter trawls were conducted.

##### 4.1 HABITATS WITHIN THE STUDY AREA

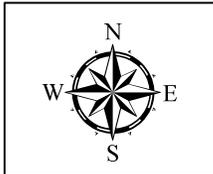
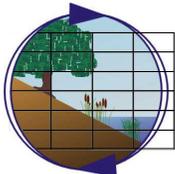
Habitats were delineated into two categories: upland and in-water (or marine), with sub-categories classified if present. They were further differentiated by elevation and/or depth, with upland habitat encompassing the area above +7.8 ft MLLW, intertidal habitat encompassing the area between +7.8 and -2.2 ft MLLW, and subtidal habitat below -2.2 ft MLLW. A summary of the various habitat types within the study area is provided in Table 1, depicted in Figure 4, and described in the following sections.

**Table 1. Habitat summary in study area.**

Category	Elevation	Habitat Type	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Upland	>+7.8 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	3,937	42,377
Marine	Intertidal +7.8 to -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	5,112	55,021
		Unvegetated Soft Bottom	1,629	17,532
		Sub-Total	6,740	72,553
	Subtidal Below -2.2 ft MLLW	Man-Made Structure (Rip-Rap Revetment)	1,495	4,934
		Unvegetated Soft Bottom	32,909	354,228
		Debris/Cobble	95	1,028
		Sub-Total	34,499	371,350
Grand Total			45,170	486,208

### Legend

- Study Area
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 4**

**Upland Area**

The upland area of the study area consists of rip rap revetment with and without concrete fill, and covers approximately 3,937 m<sup>2</sup> (42,377 ft<sup>2</sup>) (Table 1). The area is highly developed, and no special status flora or wildlife species occur in the upland areas (Figure 5).



**Figure 5. Upland area consists of rip rap revetment with and without concrete fill. Left image is north jetty looking downstream; Right image is south jetty looking downstream.**

**Intertidal/Shallow Subtidal Riprap Revetment**

The shoreline along the perimeter of the study area is armored with riprap revetment in the upper intertidal and shallow subtidal zones and covers approximately 6,607 m<sup>2</sup> (71,115 ft<sup>2</sup>) (Table 1 and Figure 5), where it transitions to unvegetated intertidal and shallow subtidal habitat.

Tide level influences the development of the riprap community, and bare rock is more common in the upper intertidal zone. Macroalgae were uncommon in the upper intertidal zone with coverage limited to small amounts of red algal turfs or occasional leafy green algae (*Ulva* sp.). Barnacles (*Balanus*, *Chthamalus*, *Tetraclita*) were abundant in the upper intertidal zone, as well as various limpets (*Lottia* spp.) and snails (*Littorina* sp., *Acanthina spirata*) (Figure 6).

In the mid to low intertidal zone, bare rock was less visible and there was a higher percentage of coralline and other small attached algae (*Chondracanthus* spp., *Ulva* sp., *Corallina* spp., *Mazzaella* spp., *Leathesia* sp., *Petrocelis*, *Gymnogongrus* spp.), in addition to other turf species (Figure 6). Observed invertebrates included sponges, tunicates, tube snails (*Serpulorbis squamigerus*), limpets (*Lottia* spp.), mussels (*Mytilus galloprovincialis*), oysters (*Crassostrea gigas*), and anemones (*Anthopleura* sp.). Similar species were also observed in the shallow subtidal zone, including red algal turfs, encrusting algae, articulated corallines, and sessile invertebrates (Figure 7).



**Figure 6. Shoreline of study area depicting revetment from upper intertidal to shallow subtidal zone.**

### **Subtidal Unvegetated Habitat**

The majority of the study area is considered to be shallow subtidal unvegetated soft bottom habitat consisting of sand, mud, and silt, with areas of accumulated shell hash and debris, and covers approximately 32,909 m<sup>2</sup> (354,228 ft<sup>2</sup>) (Table 1 and Figure 8). Sampling conducted in the Ballona Creek estuary for the Bight '08 Regional Survey noted that the sediment consisted of approximately 56% sand and 44% fines (Table 2; SCCWRP 2011a). In addition, historical sediment quality data indicated that sediments within the tidal reach of Ballona Creek are impacted by metals, pesticides, polycyclic aromatic hydrocarbons (PAHs), and other organic compounds (USACE 2017), and that Total Maximum Daily Loads (TMDLs) for trash, bacteria, and metals in the water column, and for toxics including PAHs, pesticides, and other organic compounds in sediment and fish tissue have been developed to address exceedances of these constituents in Ballona Creek.



Figure 7. Study area transitions from shallow subtidal revetment to unvegetated subtidal habitat.

Table 2. Sediment grain size in Ballona Creek from Bight '08 survey.

Classification	Mean Percent
Total Silt and Clay (less than 0.0625mm)	43.9
Very Fine Sand (0.0625 to 0.125mm)	27.8
Fine Sand (0.125 to 0.25mm)	20.1
Medium Sand (0.25 to 0.5mm)	7.5
Coarse Sand (0.5 to 1mm)	0.7
Very Coarse Sand (1 to 2mm)	0.0
Gravel (greater than 2mm)	0.0



**Figure 8. Unvegetated soft bottom habitat ranged from barren sandy areas to areas with shell hash and debris.**

Organisms that live in soft bottom habitat are referred to as infauna, while those organisms that live on soft bottom habitat are referred to as epifauna. The density (number of individuals per unit area) and species composition of these organisms are influenced by sediment grain size, amount of nutrients, water depth, pollutant levels in the sediments and overlying water, and time since the last disturbance by vessel activity and/or construction, and therefore can serve as an indicator of habitat quality. Several benthic fauna surveys have been conducted within Ballona Creek. Common infaunal organisms recorded in Ballona Creek during the Bight '08 Regional Survey included polychaete worms (*Capitella* sp., *Pseudopolydora* sp., *Polydora* spp., *Neanthes* sp.), amphipods (*Grandidierella* spp., *Mayerella acanthopoda*), and molluscs (*Saxidomus nuttalli*, *Mytilus* sp., Pectinidae, *Musculista senhousia*) (SCCWRP 2012). Benthic epifauna observed during the Bight '08 Regional Survey and other otter trawl sampling noted a variety of organisms including crabs, molluscs, and sea stars (Table 3; M&A 2009, SCCWRP 2011b).

**Table 3. Benthic epifauna observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09
Bivalve	<i>Chione</i> sp.		X
Blackspotted bay shrimp	<i>Crangon nigromaculata</i>	X	
Calico scallop	<i>Argopecten ventricosus</i>		X
California aglaja	<i>Navanax inermis</i>		X
California bubble	<i>Bulla gouldiana</i>		X
Crab	<i>Cancer</i> sp.		X
Hydroid	Hydrozoa	X	
Mediterranean mussel	<i>Mytilus galloprovincialis</i>		X
Northern kelp crab	<i>Pugettia producta</i>		X
Nudibranch	<i>Dendronotus frondosus</i>	X	
Shore crab	<i>Hemigrapsus oregonensis</i>		X
Slender crab	<i>Metacarcinus gracilis</i>	X	
Spider crab	<i>Pyromaia tuberculata</i>	X	X
Spiny sand star	<i>Astropecten armatus</i>	X	
Winged sea slug	<i>Gastropteron pacificum</i>		X

Several fish surveys have been conducted in the Ballona Creek estuary and include the Bight '08 Regional Survey, otter trawl sampling conducted by Merkel & Associates in 2009, and habitat mapping for this project which utilized ROV. The results are summarized in Table 4, and the more common fishes included Round Stingray (*Urobatis halleri*), Spotted Sand Bass (*Paralabrax maculatofasciatus*), Black Croaker (*Cheilotrema saturnum*), Specklefin Midshipman (*Porichthys myriaster*), gobies (Gobiidae), flatfishes (*Paralichthys californicus*, *Pleuronichthys guttulatus*, *Parophrys vetulus*, *Xystreurys liolepis*, *Citharichthys sordidus*, *Pleuronichthys ritteri*) (M&A 2009, SCCWRP 2011b). Although two individual southern California steelhead (*Oncorhynchus mykiss irideus*) were observed in Ballona Creek in 2008 (upstream of the Ballona Reserve), the creek and its tributaries are heavily urbanized and do not provide suitable foraging or spawning habitat (USACE 2017).

### **Subtidal Vegetated Habitat**

Vegetated subtidal habitats are an essential component of southern California's coastal marine environment. Eelgrass (*Zostera marina*) beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. The survey of in-water habitats completed in April 2020 detected no eelgrass in the shallow waters of the study area.

**Table 4. Fish species observed in study area.**

Common Name	Scientific Name	Bight '08	M&A '09	M&A '20
Bay Pipefish	<i>Syngnathus leptorhynchus</i>		X	
Black Croaker	<i>Cheilotrema saturnum</i>		X	
California Halibut	<i>Paralichthys californicus</i>	X	X	
California Lizardfish	<i>Synodus lucioceps</i>	X		
CIQ goby	<i>Clevelandia/Ilypnus/Quietula complex</i>		X	
Diamond Turbot	<i>Pleuronichthys guttulatus</i>		X	
English Sole	<i>Parophrys vetulus</i>	X		
Fantail Sole	<i>Xystreureys liolepis</i>	X	X	
Hornyhead Turbot	<i>Pleuronichthys verticalis</i>	X	X	
Kelp Bass	<i>Paralabrax clathratus</i>			X
Pacific Sanddab	<i>Citharichthys sordidus</i>	X		
Queenfish	<i>Seriphus politus</i>		X	
Roughback Sculpin	<i>Chitonotus pugetensis</i>	X		
Round Stingray	<i>Urobatis halleri</i>		X	
Salema	<i>Xenistius californiensis</i>		X	
Sargo	<i>Anisotremus davidsonii</i>		X	
Shiner Surfperch	<i>Cymatogaster aggregata</i>		X	
Shovelnose Guitarfish	<i>Rhinobatos productus</i>		X	
Speckled Sanddab	<i>Citharichthys stigmaeus</i>	X		
Specklefin Midshipman	<i>Porichthys myriaster</i>	X		
Spotted Bay Bass	<i>Paralabrax maculatofasciatus</i>			X
Spotted Turbot	<i>Pleuronichthys ritteri</i>	X		
Staghorn Sculpin	<i>Leptocottus armatus</i>		X	
Striped Kelpfish	<i>Gibbonsia metzi</i>		X	
Topsmelt	<i>Atherinops affinis</i>		X	X
Yellowfin Croaker	<i>Umbrina roncadore</i>		X	
Zebra Perch	<i>Kyphosus azureus</i>			X

Note: Bight '08 sampling conducted with 25' otter trawl; M&A '09 sampling conducted with 10' otter trawl; M&A '20 sampling conducted with ROV

### **Open Water**

Open water/water column habitat due to its three dimensional component, is the largest habitat type within the study area, and supports pelagic fishes and occasionally marine mammals. A common schooling species observed within the study area is Topsmelt (*Atherinops affinis*), and while not observed, other schooling species such as Northern Anchovy (*Engraulis mordax*) and Sardines (*Sardinops sagax*) may also occur in the area. The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers. These fish also provide an important forage base for predatory fish species.

#### 4.2 WETLANDS AND SENSITIVE HABITATS

Wetlands, as defined by the USACE, are not present within the study area. The nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area.

Eelgrass is a rooted aquatic plant that inhabits shallow soft bottom habitats in quiet waters of bays and estuaries, as well as sheltered coastal areas. It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Eelgrass is considered a Submerged Aquatic Vegetation (SAV), and a “special aquatic site” under the CWA. Pursuant to the MSA, eelgrass is designated as a Habitat Area of Particular Concern (HAPC) within EFH for various federally-managed fish species within the Pacific Coast Groundfish FMP (NMFS 2014a). As noted in the Subtidal Vegetated Habitat section, eelgrass was not detected within the study area in April 2020.

#### 4.3 WILDLIFE CORRIDORS

Ballona Creek provides movement for marine fish species into and out of the study area, and occasionally marine mammals such as California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina richardsi*) have been observed in the Ballona Creek channel (USACE 2017). Several whale species migrate along the coast of California, including the California gray whale (*Eschrichtius robustus*). The peak northward migration of male gray whales occurs in mid-March, followed two months later by the second migration wave, which is composed of cows and calves. Whales typically do not occur in harbors like Marina del Rey or estuaries like Ballona Creek (USACE 2017). While mobile animals make use of the creek mouth, it is not considered a wildlife corridor (USACE 2017).

#### 4.4 SENSITIVE WILDLIFE

Table 5 lists sensitive animal species with the potential and likelihood to occur within the study area. Only two species listed by USFWS and/or CDFW as federally or state endangered or threatened have the potential to occur within the study area: the federally endangered steelhead and federally threatened green sea turtle (*Chelonia mydas*). While two steelhead were observed upstream of the study area in Ballona Creek in 2008, the upstream habitat was considered low quality, providing limited foraging, spawning or rearing habitat (USACE 2017). Further, subsequent surveys have not detected steelhead within Ballona Creek (USACE 2017).

Green sea turtles are known to occur in the warm water discharge of a Long Beach power plant, but are rarely sighted in Santa Monica Bay. Due to lack of required water temperatures, food sources, and nesting habitat within Ballona Creek they are unlikely to regularly occur in the study area.

Finally, several species of marine mammals which are protected by the MMPA may occur in the study area (Table 5). California sea lion (*Zalophus californianus californianus*) and, to a lesser extent, Pacific harbor seal (*Phoca vitulina richardsi*) are the two most common species of marine mammals that occur within harbors and bays. California sea lion and Pacific harbor seal may occasionally be observed in the vicinity of the study area, but are not expected to utilize the area. Dolphins and whales are not anticipated to be present within the study area (USACE 2017).

**Table 5. Sensitive species with potential to occur within the study area.**

Common Name	Scientific Name	Status	Occurrence in Study Area
<b><u>Fish</u></b>			
Southern California Steelhead	<i>Oncorhynchus mykiss irideus</i>	FE; SSC; S1	Very Low Potential - Migrate into fresh water streams when sandbars breach during winter and spring rains. Occur in coastal streams with water temperatures < 15°C. Need cool, clear water with in-stream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean. Spawning habitat consists of gravel substrates free of excessive silt. In 2008, observed in Ballona Creek approximately 2.5 miles upstream of the Marina Freeway overpass; however, focused aquatic surveys from 2009-2011 have not detected this species on the study area. No spawning habitat available in Ballona Creek (USACE 2017).
<b><u>Reptiles</u></b>			
Green Sea Turtle	<i>Chelonia mydas</i>	FT; S1	Very Low Potential - Inhabits coastal areas for benthic feeding and beaches for nesting. In the eastern North Pacific, green sea turtles have been sighted from Baja California to southern Alaska. While turtles commonly occur from San Diego southward, they have an established population at the San Gabriel River estuary and Los Cerritos Wetlands, 30 miles to the south. Rare sightings are reported in Ballona Creek (USACE 2017).
<b><u>Marine Mammals</u></b>			
Pacific Harbor Seal	<i>Phoca vitulina richardsi</i>	MMPA	Low Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
California Sea Lion	<i>Zalophus californianus californianus</i>	MMPA	Moderate Potential – Forages and loafs within the harbors and inshore waters of Santa Monica Bay.
Coastal Bottlenose Dolphin	<i>Tursiops truncatus</i>	MMPA	Low Potential – Highly mobile within the inshore waters of Santa Monica Bay (Fandel et al. 2015).
California Gray Whale	<i>Eschrichtius robustus</i>	MMPA	Very Low Potential – Regular migrant in offshore waters, but uncommon in bay and nearshore waters.

**Notes:** FE – Federally Endangered; FT – Federally Threatened; MMPA – species protected by the Marine Mammal Protection Act; SSC – CDFW Species of Special Concern; S1 – Critically Imperiled - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

## 5.0 IMPACT ANALYSIS

The study area is similar to other developed shallow embayments and estuaries located in coastal areas in the Southern California Bight with regard to distribution of habitats and biological features. This analysis focuses on stressors associated with the proposed project elements (i.e., upland construction, vessel operations, and shading) and their potential impact to biological resources including in-water habitat (i.e., intertidal/shallow subtidal riprap revetment, unvegetated subtidal habitat, open water), upland habitat, wildlife corridors, and sensitive species within the study area. As noted in the project description, no in-water construction (e.g., dredging, filling, pile driving) is proposed, and the potential stressors from the proposed project include:

- Mooring construction (in upland area)
- Barge placement
- Barge maintenance operations

Since it is anticipated that elements of the project will be phased, the impacts are analyzed by habitat type and based on the potential stressor.

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region (Santa Monica Bay), the sensitivity of the resource to activities associated with the proposed project, and the duration or ecological ramifications associated with the effect. Per California Environmental Quality Act (CEQA) Guidelines, Section 15000 et seq., impacts are considered significant if they would result in:

- Degradation of critical habitat or reduction in the population size of a listed species (threatened or endangered);
- Degradation of rare or biologically valuable habitat;
- A measurable change in ecological function within the project vicinity;
- A measurable change in species composition or abundance beyond that of normal variability;
- A substantive loss of water surface area through fill or surface water coverage as a result of permanent structures such as docks, wharves, and permanently moored vessels. Small structures such as moorings, navigational aids, individual or widely spaced piles do not result in a substantive loss of water area; or
- An obstruction or alteration of circulation patterns that result in a discernable degradation of water mixing, circulation, or flushing to the extent that biota would be negatively affected in the system.

Impacts to habitats and wildlife can be measured as direct and/or indirect, as well as permanent or temporary. Direct impacts are those that have a direct impact on habitats or wildlife and occur contemporaneously with the action. Direct impacts of in-water construction to wildlife include immediate physical and physiological impacts such as abrupt changes in behavior, flight response, diving, evading, flushing, cessation of feeding, and physical impairment or mortality. Direct impacts to habitats can include damage from construction activities, as well as permanent habitat loss due

to project construction. In contrast, indirect impacts are effects that are caused by or will result from the proposed action at a later time, but are still reasonably certain to occur.

### 5.1 UPLAND AREA IMPACTS

The proposed project consists of construction of six concrete mooring/anchoring pads with each pad covering approximately 76 m<sup>2</sup> (820 ft<sup>2</sup>) for a total construction footprint of approximately 457 m<sup>2</sup> (4,920 ft<sup>2</sup>) on top of the existing rip rap revetment (Table 6 and Figure 9). The construction footprint consists of rip rap revetment with and without concrete fill and supports no special status wildlife or flora species or sensitive habitat. Therefore, temporary impacts on upland habitat are expected, but no significant impacts to biological resources on upland habitat are anticipated from the implementation of the proposed project.

**Table 6. Impact summary for marine habitats.**

Project Element	Category	Habitat Type	Nature of Impact	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
Mooring Footprint	Upland Habitat	Man-Made Structure (Rip-Rap Revetment)	Construction/ Fill	457	4,920
Interceptor™ Tie Down	Marine Habitat	Unvegetated Soft Bottom	Shading	385	36
Interceptor™ Footprint	Marine Habitat	Unvegetated Soft Bottom	Surface Cover/ Shading	56	603

### 5.2 IN-WATER HABITAT IMPACTS

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

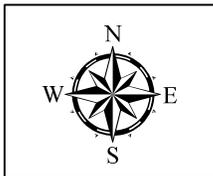
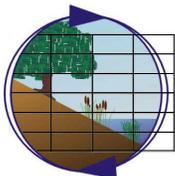
The mooring platforms placed on top of the rip rap revetment will be used to stabilize the Interceptor™ with chain (Figure 3). The chain is anticipated to run just below the waterline but would not rest on the seafloor, and the two upstream platforms would anchor the floating trash booms that would funnel waste to the Interceptor™ barge. The project will not directly impact the intertidal/shallow subtidal revetment, and therefore, no impacts on intertidal/shallow subtidal revetment habitat are expected, and no significant impacts to biological resources associated with intertidal/shallow subtidal revetment are anticipated from the implementation of the proposed project.

#### **Intertidal and Subtidal Unvegetated Habitat**

Barge placement and tie downs would have a direct impact to approximately 92 m<sup>2</sup> (989 ft<sup>2</sup>) of intertidal and subtidal unvegetated habitat including the associated benthic community due to shading (Table 6 and Figure 9). Since the barge is floating, there would be no direct loss or mortality of any benthic infauna and epifauna within the barge footprint, and since eelgrass is not present, no shading impacts to eelgrass would occur. The impact area is relatively small and there is considerable similar soft bottom habitat immediately adjacent to the project footprint, and therefore, impacts associated with barge placement are considered less than significant.

### Legend

- Study Area
- Interceptor Tie Downs
- Interceptor Footprint
- Mooring Footprint
- Debris
- Revetment
- Sand



**Habitat Map Existing Conditions and Project Elements**  
 Ballona Creek Trash Interceptor Project  
 Marina del Rey, CA

Bathymetric Contours: 2009 US Army Corps of Engineers (USACE) Joint Airborne  
 Lidar Bathymetry Technical Center of Expertise (JALBTCX) Bathymetric Lidar: Southern California

**Figure 9**

In addition, the barge would result in a 56 m<sup>2</sup> (603 ft<sup>2</sup>) increase of surface area coverage; an increase in surface cover would decrease open water habitat (Table 6). This would decrease the foraging habitat available for piscivorous avian species, although given the relatively small areas affected, this increase in surface coverage would not be considered significant.

### **Subtidal Vegetated Habitat**

No eelgrass vegetated habitat was detected in the study area and therefore, no impacts are expected.

### **Open water**

Since no in-water construction activities are proposed, effects from construction such as temporary and localized increases in turbidity and sedimentation within the water column, or noise (enonification) which can result in temporary and or permanent impacts to organisms in the water are not expected. With respect to noise, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected. During construction, the Project would only require the use of some equipment (e.g. saws, generators, air compressors, pump, cement mixers) along the adjacent jetty, not within the Ballona Creek channel. Accordingly, given existing noise and vessel traffic disturbance, a short term installation period, minimal noise associated with the solar-powered operation of the water flow-through system the Project is not expected to create long-term noise disturbance or cause associated harm to organisms in the water column. And given the location of the project, it is anticipated that water velocities will be tidally and storm driven, and that the placement of the barge and barriers would not meaningfully alter water velocities, sedimentation rates, or circulation patterns in the study area. As noted above, the proposed project would temporarily result in an increase of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>) of surface area coverage (Table 6). This increase in surface coverage (or loss of open water habitat) is not expected to affect foraging by piscivorous avian species and is not considered significant.

## **5.3 IMPACTS TO WETLANDS AND SENSITIVE HABITATS**

As described above, the nearest wetlands are located upstream of Ballona Creek, along the south side of the channel approximately 0.2 miles away from the study area. The proposed project would not alter water flow or water quality to marsh habitat, and is not anticipated to degrade marshlands in any way. Therefore no significant impacts to wetlands are anticipated to occur.

Eelgrass beds are considered to be a sensitive habitat and “special aquatic site” under the CWA and are designated as EFH, and as noted in the Subtidal Vegetated Habitat section, no eelgrass was present within the study area and therefore, no impacts to eelgrass habitat are anticipated to occur.

## **5.4 IMPACTS TO ESSENTIAL FISH HABITAT**

As part of the EFH consultation process, the guidelines require Federal action agencies to prepare a written EFH Assessment describing the effects of that action on EFH (50 CFR 600.920(e)(1)). The EFH Assessment is a necessary component for efficient and effective consultations between a federal action agency and NMFS. In the case of the project, work proposed would require

permitting under Section 10 of the RHA. For this permit action, the USACE is the lead federal action agency. An EFH Assessment for the proposed project is provided in a separate document.

## **5.5 IMPACTS TO WILDLIFE CORRIDORS**

As described above, the study area does not provide any specific wildlife movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. Consequently, impacts of the proposed project on wildlife corridors, movement of resident and migratory species, and usage of nursery sites are considered to be less than significant.

## **5.6 IMPACTS TO SENSITIVE WILDLIFE**

Table 5 provides a summary of sensitive animal species that have potential to occur within the study area. The following text expands on the likelihood of occurrence for these species, and describes potential impacts to sensitive species that may result from project implementation.

### **Fish**

Although two southern California steelhead were observed in Ballona Creek in 2008, this species is expected to have a less than reasonable likelihood of occurring due to the lack of suitable conditions, the species not being detected during recent surveys, and the study area being outside their known range, and therefore no impacts to steelhead are expected from the proposed project.

### **Reptiles**

Environmental threats to sea turtle populations include contamination from coastal runoff, plastic and other debris, fueling facilities, marina and dock construction, dredging, aquaculture, oil and gas exploration and extraction, and increased underwater noise and boat traffic that can degrade marine habitats used by marine sea turtles. As described in Section 5.2 above, the mouth of Ballona Creek is adjacent to the Marina del Rey Harbor and is exposed to regular traffic of large and small boating vessels. Therefore, some level of acclimation to noise exposure is expected for local species. Sea turtles swimming or feeding at or just beneath the surface of the water are particularly vulnerable to boat and vessel strikes, which can result in serious propeller injuries and death. Potential impacts to green sea turtle from the proposed project are primarily related to construction activities associated with barge placement and vessel traffic. Protective measures included in the project to minimize impacts to sea turtles include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to sea turtles are considered to be less than significant.

### **Marine Mammals**

Harbor seals and California sea lions are commonly observed in Santa Monica Bay. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the study area or vicinity, although they may make occasional transient use of the area. No in-water construction is anticipated, but vessel traffic will occur during barge placement and maintenance, and any marine mammals would be expected to leave the site for adjacent waters if disturbed by project activities. However, the MMPA prohibits “take” of marine mammals. The definition of “take” under the MMPA, like that of the ESA, includes “harassment”. For this reason, a potentially significant impact to marine mammals could occur if animals are disturbed during project activities, even if they are not harmed by the activities.

Similar to sea turtles, potential impacts to marine mammals from the proposed project are primarily related to project activities associated with vessel traffic. Marine mammals could be struck by boats or boat motors at the study area. In addition, boat noise generated during the installation period and operational activities, as well as, noise associated with the solar-powered operation of the water flow-through system are not expected to impact marine mammals or sea turtles. However, protective measures included in the project to minimize impacts to marine mammals include maintenance of no wake boat speeds within and adjacent to the study area. With protective measures incorporated, impacts to marine mammals are considered to be less than significant.

## **5.7 CUMULATIVE IMPACTS**

Cumulative effects are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts can be derived from a single project or a number of separate projects, and is further defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Based on the definitions provided under CEQA, the following analysis assumes that a significant adverse cumulative biological resources impact would occur where the construction or operation of the cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, result in loss or fragmentation of sensitive habitats, or affect the functionality of a planned conservation area. As discussed above, no significant impacts to sensitive habitats or biological resource from the proposed project are anticipated, and any potential impacts to sensitive animals are reduced to less than significant by incorporation of protective measures during construction.

## **6.0 MITIGATION AND PROTECTIVE MEASURES**

### **6.1 MARINE RESOURCE MITIGATION**

#### **Intertidal/ Shallow Subtidal Riprap Revetment**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal rip rap revetment habitat since no in-water construction is proposed.

#### **Intertidal and Subtidal Unvegetated Habitat**

Based on current project design, no mitigation would be required for intertidal/shallow subtidal unvegetated habitat since no in-water construction is proposed.

#### **Subtidal Vegetated Communities**

Based on current project design, no mitigation would be required for eelgrass since no eelgrass is present within the study area.

#### **Surface Coverage**

Based on current project design, no mitigation would be required for surface coverage since the project would result in a temporary small increase in surface coverage of approximately 56 m<sup>2</sup> (603 ft<sup>2</sup>).

### **Open Water**

Based on current project design, no mitigation would be required for open water habitat since no in-water construction is proposed.

## **6.2 SENSITIVE SPECIES MITIGATION**

### **Reptiles**

To mitigate potential impacts to eastern Pacific green sea turtles to a less than significant level, the following measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

### **Mammals**

To mitigate potential impacts to marine mammals to a less than significant level, the following construction measures are recommended.

- 1) Construction and operational vessel traffic shall not exceed existing designated speed for the marina.

## **7.0 CONCLUSIONS**

The proposed project would be expected to result in limited impacts to in-water biota and habitats found in the study area. Construction is limited to upland construction in an urbanized area, with no in-water construction proposed, although it is anticipated that tug boats would be used for barge placement and maintenance, including the installation of mooring chain which is anticipated to run just below the waterline but not along the seafloor. Any impact associated with barge placement is anticipated to be of a short-term, temporary nature and is not expected to have permanent or population-level impact to sensitive habitat or species, EFH, or managed fish species. One potential impact may occur to marine reptiles (e.g., sea turtles) and marine mammals (e.g., California sea lion and harbor seal) which could be struck by boats or boat motors at the study area. Any disturbance to sea turtles or marine mammals is considered harassment and would be significant. While it is unlikely that sea turtles or marine mammals would occur in the study area, incorporation of the protection measures listed above would reduce any impacts to less than significant. No significant impacts to wetlands, upland habitat, wildlife migration or corridors are anticipated. Cumulative impacts are considered to be less than significant.

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**Ballona Creek Trash Interceptor™ Pilot  
Project**

Cultural Resources Assessment

October 16, 2020

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**Ballona Creek Trash Interceptor™ Pilot Project**  
Cultural Resources Assessment

This document entitled CULTURAL RESOURCES ASSESSMENT FOR THE BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT, LOS ANGELES COUNTY, CALIFORNIA, was prepared by Stantec Consulting Services Inc. for Los Angeles County Public Works (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not incorporate any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by  \_\_\_\_\_  
(signature)

**Mitch Marken, PhD, RPA, LEED, Principal Investigator**

Reviewed by  \_\_\_\_\_  
(signature)

**Mike Weber, Senior Principal Scientist**



**Ballona Creek Trash Interceptor™ Pilot Project**  
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**Ballona Creek Trash Interceptor™ Pilot Project**  
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## Abbreviations

APE	Area of Potential Effects
BLAD	Ballona Lagoon Archaeological District
BP	years before present
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
HCM	City of Los Angeles Historic-Cultural Monument
Interceptor™	Floating, automated trash Interceptor™ vessel
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
Project	Ballona Creek Trash Interceptor™ Pilot Project
SCCIC	South Central Coast Information Center
SHPO	California State Historic Preservation Officer
SLF	Sacred Lands File
Stantec	Stantec Consulting Services Inc.
USACE	U.S. Army Corps of Engineers





## Ballona Creek Trash Interceptor™ Pilot Project Cultural Resources Assessment

### 1.0 MANAGEMENT SUMMARY

Stantec Consulting Services Inc. (Stantec) conducted a Class III intensive cultural resources inventory on behalf of Los Angeles County Public Works on the embankments of Ballona Creek near the Pacific Ocean coastline, west of the Ballona Creek-Pacific Avenue Bridge (Pacific Avenue Bridge) in the City of Los Angeles, adjacent to Marina del Rey in Los Angeles County, California (**Figure 1**). The cultural resources inventory was conducted in support of the Ballona Creek Trash Interceptor™ Pilot Project (Project) proposed by Los Angeles County Public Works to reduce the amount of trash entering Santa Monica Bay from Ballona Creek. The proposed Project includes installation of a floating, automated trash Interceptor™ vessel (Interceptor™) near the mouth of Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. The floating Interceptor™ would be a single vessel that would moor in Ballona Creek and would be attached to mooring points along the adjacent jetties. The placement of trash booms and the current of the channel would be used to collect trash in the Interceptor™ before the refuse reaches the Pacific Ocean. The Interceptor™ would be located approximately 717 feet west of the Pacific Avenue Bridge, where a small monitoring system would be installed. Ballona Creek Channel is a modified natural waterway that was channelized in the 1930s to 1960s.

The U.S. Army Corps of Engineers (USACE) Los Angeles District is the lead agency for the Project under Section 106 of the National Historic Preservation Act (NHPA). As part of NHPA compliance, a Class III cultural resources inventory was conducted to determine whether the Project has the potential to affect cultural resources potentially eligible for nomination to the National Register of Historic Places (NRHP). Native American consultation was not conducted by Stantec and is pending following authorization by and coordination with USACE.

Per 36 Code of Federal Regulations (CFR) 800.15(d), the Area of Potential Effects (APE) “means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the historic character or use of historic properties, if any such properties exist.” The APE for this Project accounts for both direct and indirect effects for cultural resources by considering the scale and nature of the Project. The Interceptor™ is a vessel, which would be moored to the jetties on the north and south sides of the channel to maintain its position within the channel. The installation of moorings on the jetties and of monitoring equipment on the Pacific Avenue Bridge would constitute areas of direct impact. The Interceptor™ vessel stationed within the channel may cause indirect effects to historic built environment resources from the introduction of visual impacts.

A Class III intensive cultural resources inventory is the most comprehensive and systematic survey type used for the identification of historic property. Class III typically includes a detailed field survey of the project area, coupled with extensive background research. This allows the project team to identify and evaluate the potential for any historic properties in proximity to a project and within the established APE where adverse effects may occur. This Class III study includes a records search conducted by the South Central Coast Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) located at California State University, Fullerton. To supplement Stantec's in-house data on the



## Ballona Creek Trash Interceptor™ Pilot Project

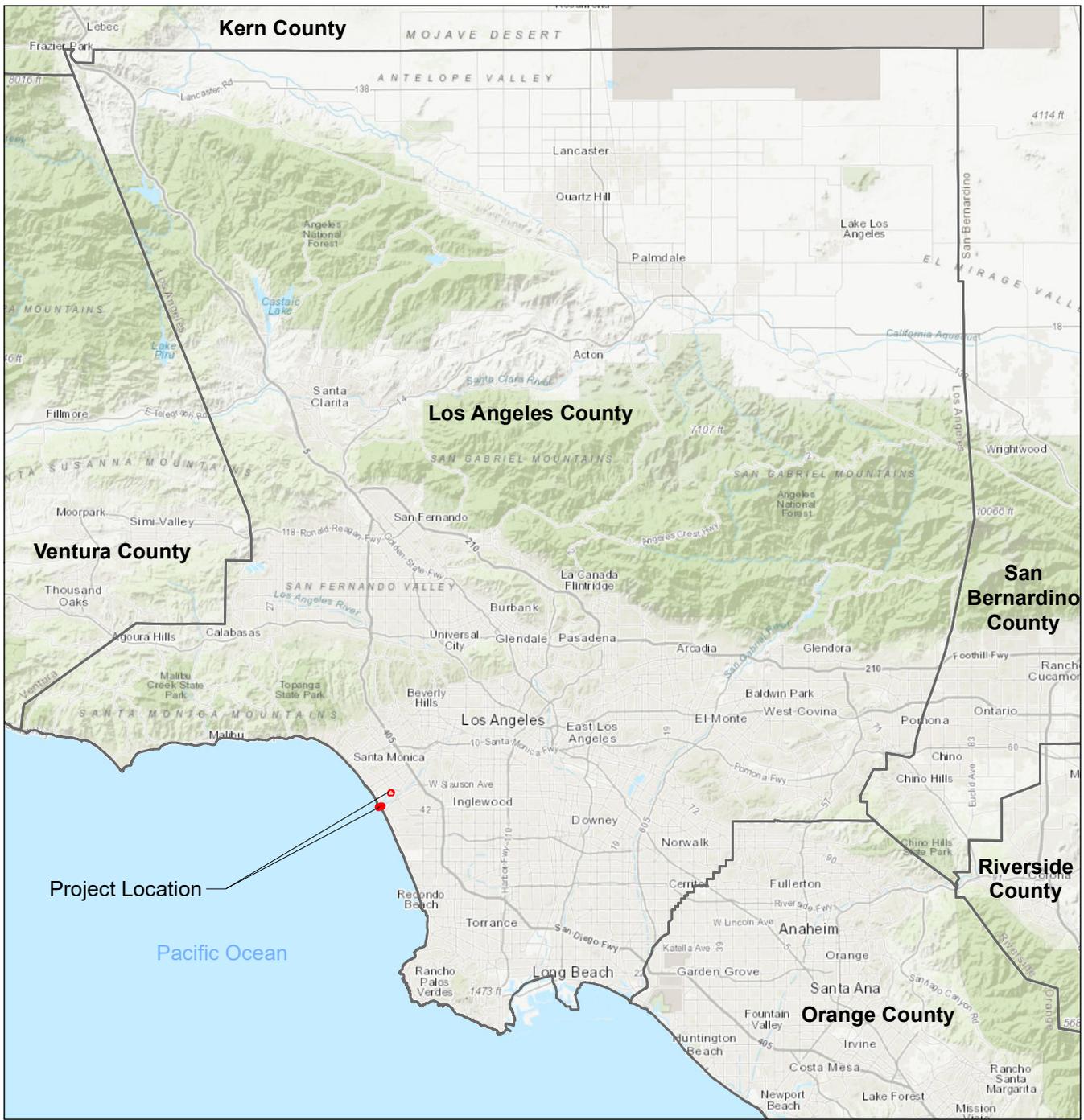
### Cultural Resources Assessment

APE, an intensive review of online source materials was conducted, including the City of Los Angeles' SurveyLA findings and historic context statements, reports by USACE and the California Department of Transportation (Caltrans), and historic records at the City of Los Angeles Public Library. A Sacred Lands File (SLF) search with the Native American Heritage Commission (NAHC) was requested, and their April 15, 2020 response (Appendix A) indicated that the location of the Project was "positive" for Native American sensitivity. An intensive pedestrian survey of the APE was conducted on March 6, 2020 by Stantec Cultural Resources Director Mitch Marken, PhD, RPA, LEED, to determine whether there were cultural resources visible within or adjacent to the APE and to photo-document the existing conditions for analysis of built environment resources by Stantec Architectural Historians Garret Root and Dan Herrick.

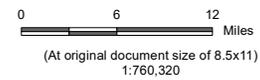
The Project is located in an area that historically has seen tremendous development, modification, and disturbance, including dredging and construction of jetties and breakwaters. At the time of the pedestrian survey, the south embankment of Ballona Creek just east of the Pacific Avenue Bridge was undergoing a large sewer replacement project that required large subsurface excavation. Although the archaeological records search revealed that the area inland of the Project is generally sensitive for prehistoric and ethnographic resources, and the land now submerged under the APE may have been within a fluid boundary of a NRHP Archaeological District (the Ballona Lagoon Archaeological District) prior to dredging, it is unlikely that the Project will impact intact archaeological deposits due to the fluvial nature of the Project and its specific location within Ballona Creek and limited mooring at the modern, manmade jetties.

There are three built environment resources adjacent to the Project. The Ballona Creek Channel itself and the Marina del Rey breakwater were previously evaluated as potential built environment resources, but did not qualify for NRHP listing under the NHPA (Daley & Associates 2015). The Pacific Avenue Bridge, situated just upstream from the proposed Interceptor™ mooring location, was evaluated in 2013 as part of the SurveyLA study and was determined eligible for listing in the NRHP, the California Register of Historical Resources (CRHR), and as a Los Angeles Historic-Cultural Monument (HCM) (City of Los Angeles 2013). After analysis of the qualities of significance of the Pacific Avenue Bridge, Stantec concludes that the Project would not cause an adverse effect to the Pacific Avenue Bridge and we recommend a Section 106 finding of No Adverse Effect to Historic Properties.





 Project Location



Location of Project: Ballona, Los Angeles County, California  
 Site latitude Longitude: 33.962072, -118.455708  
 River mile distance: 0.052 Miles  
 Channel Reference Station: Station Lab: 5+00 & 10+00  
 Ballona Creek, Santa Monica Bay



*Project Location* Prepared by DL on 2020-09-28  
 Ballona Creek TR by ST on 2020-09-28  
 Los Angeles County, California IR by LM on 2020-09-28  
*Client/Project* 184031268  
 Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Permit Package

*Figure No.*  
**1**

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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## Ballona Creek Trash Interceptor™ Pilot Project

### Cultural Resources Assessment

## 2.0 PROJECT LOCATION

The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty and North Jetty, respectively), that will be used for this Project.

## 2.1 EXISTING CONDITIONS

The Project site is centered on Ballona Creek, which is an urban, soft bottom flood control channel; the Project site is considered urbanized. The Project site is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats coming back to the harbor. There are also two (2) viewing decks with concrete benches and a guardrail on top of the North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side, which is covered with a jagged rock outcrop.

The area surrounding the Project site is predominantly Medium Residential (to the south) and Open Space (to the north). Nearby uses include the Laguna Del Rey multi-family residential complex, Del Rey Lagoon (a lagoon and recreational space), the Ballona Wetlands Ecological Reserve (BWER), University of California Los Angeles Marina Aquatic Center, the Ballona Creek-Pacific Avenue Bridge and bike path, Dockweiler Beach (recreational and public use), and the entrance to the Marina del Rey Harbor.

## 3.0 PROJECT DESCRIPTION

The proposed Project includes installation of an Interceptor™ vessel near the mouth of Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. The Interceptor™ is a single vessel that would sit within the center of the Ballona Creek Channel and passively use the current of the channel to collect trash before the refuse reaches the Pacific Ocean. It is composed of several parts, including a steel catamaran hull, trash boom barriers that extend off the vessel to guide refuse, a low-speed conveyor built to continuously extract debris, a shuttle that distributes refuse into six receptacles (each 293 cubic feet) located at the top of the barge, and a solar panel system that powers the vessel. The typical system size of the Interceptor™ is 25.9 feet wide by 77.6 feet long by 19.4 feet high, with a debris barge size of 14.8 feet wide by 45.9 feet long by 2.5 feet high and includes a six-point mooring system. However, it is anticipated the Interceptor™ system size for the Project would be smaller pending completion of final design.

The Interceptor™ is a floating vessel and would be moored to the existing Ballona Creek North Jetty using four mooring lines to maintain its position. These mooring lines will sag below the water surface



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using weights to allow boats to travel over them. In order to concentrate floating debris, the trash boom barriers will be also be moored using two additional mooring points atop the jetties (for a total of six moorings). The mooring blocks and handrails would be installed using hand tools to moor the Interceptor™ across Ballona Creek channel and to the jetty itself. Each mooring would have a concrete pad on the jetty, which would be installed above-grade with an approximate depth of disturbance of 12 inches, as well as ramps with railings installed and attached to mooring ties to hold the Interceptor™ in place.

A simple monitoring system would be attached to the existing Pacific Avenue Bridge, which crosses the Ballona Creek channel, approximately one-half-mile upstream from the mouth of Ballona Creek. The monitoring system would track the amount of floatable debris passing underneath the Pacific Avenue Bridge towards the Interceptor.

## 4.0 REGULATORY FRAMEWORK

This cultural resources study was conducted to meet USACE NHPA Section 106 requirements by identifying historic properties that may be affected by the agency's undertakings and determine any potential adverse effects to historic properties.

### 4.1 FEDERAL REQUIREMENTS

Federal requirements can be found in Section 106 of the NHPA (54 United States Code Section 300101 et seq.). The Section 106 process includes specific steps to determine the effects of federal undertakings on historic properties. A federal undertaking can be a federal project, or in the case of the Ballona Creek Trash Interceptor™ Pilot Project, the issuance of a federal permit. Historic properties can include buildings; neighborhoods; structures such as bridges, historical settings, landscapes, or archaeological sites; and many other resources that convey our history. In order to qualify as a "historic property" for the purposes of Section 106 consultation, a resource must be listed on the NRHP, or determined eligible for listing. Generally, properties under 50 years old will not be considered for listing on the NRHP unless they demonstrate exceptional importance.

For a property to qualify for inclusion in the NRHP and therefore be considered a historic property, it must meet the criteria for evaluation set forth in 36 CFR Part 60.4, as follows:

*The property must exhibit the quality of significance in American history, architecture, archaeology, engineering, and culture and it can be present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association and:*

- A. *that are associated with events that have made a significant contribution to the broad patterns of our history; or*
- B. *that are associated with the lives of persons significant in our past; or*



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- C. *that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- D. *that have yielded, or may be likely to yield, information important in prehistory or history.*

An agency's determination of an undertaking's potential effects on historic properties serves as the basis for developing measures to avoid adverse effects, or if adverse effects cannot be avoided, actions or measures that can be implemented to mitigate adverse effects. Below is a brief summary of the steps a federal agency follows in determining the effect of projects on historic resources:

- The agency determines whether the Project is a federal undertaking
- The APE is defined and approved by the agency
- Potential historic properties are identified
- Potential historic properties are evaluated to determine whether they qualify for inclusion in the NRHP
- Effects of the Project on historic properties are evaluated
- Project effects on historic properties, if any, are resolved through avoidance or mitigation

#### 4.1.1 Area of Potential Effects

This Cultural Resources Assessment proposes a delineation of the APE and describes efforts to identify potential historic properties within the APE. The APE for this Project was designed to consider the undertaking's direct and indirect effects on cultural resources. As outlined previously, an APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any properties exist" (36 CFR 800.16(d)). The proposed APE for this undertaking is confined to the proposed moorings on the jetties (direct), and the visible intrusion of a trash collection vessel in the channel (indirect). The proposed APE extends east and west along the Ballona Creek channel alignment from the Interceptor™ location, with the Pacific Avenue Bridge forming the east boundary and the end of the Ballona Creek South Jetty forming the west boundary. The Ballona Creek North and South Jetties form the respective north and south boundaries of the APE (**Figure 2**). Formal determination of the federal APE will be done in consultation with USACE and the California State Historic Preservation Officer (SHPO) following the submittal of this report by the USACE to SHPO.

#### 4.1.2 Efforts to Identify Historic Properties (Cultural Resources)

A records search using a 0.5-mile radius study area for the Project was conducted by the SCCIC of the CHRIS located at California State University, Fullerton in June 2020. The Project would be located in an un-sectioned portion of the Ballona (Paso de las Carretas) Mexican Land Grant, meaning it predates township surveying under the U.S. Public Land Survey System, as depicted on the Venice, CA (1981) U.S. Geological Survey 7.5-minute topographic quadrangle.



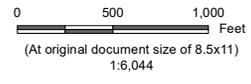
Area of Potential Effects

Existing Bikeways

**Project Footprint**

- Mooring Footprint (0.113 Acres)
- Interceptor Assembly Area (0.62 Acres)
- Mooring Construction Staging Areas (0.37 Acres)
- Interceptor/ Mooring Chains Footprint (0.023 Acres)
- Trash Boom
- Mooring Line

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



*Project Location* Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-14  
 TR by ST on 2020-09-14  
 IR by DH on 2020-09-14

*Client/Project* Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Cultural Resources Assessment Report  
 184031268

*Figure No.*  
**2**

*Title*  
**Area of Potential Effects**

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## **Ballona Creek Trash Interceptor™ Pilot Project**

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To supplement the formal SCCIC records search, Stantec conducted an intensive review of online and in-house background documentation including, but not limited to, the City of Los Angeles' SurveyLA published findings and historic context statements, reports by USACE and Caltrans, and historic records at the City of Los Angeles Public Library. Stantec requested a SLF search with NAHC, and the NAHC's April 15, 2020 response (Appendix A) indicated that the location of the Project was "positive" for Native American sensitivity. On March 6, 2020, Stantec Cultural Resources Director Mitch Marken, PhD, RPA, LEED, conducted an intensive pedestrian survey of the APE to determine whether there were cultural resources visible within or adjacent to the APE and to photo-document the built environment for analysis by Stantec Architectural Historians Garret Root and Dan Herrick. The results of these efforts are reported below.

## **5.0 ENVIRONMENTAL SETTING AND BACKGROUND**

The Project area is located in the City of Los Angeles, California, within Ballona Creek, between the communities of Marina del Rey and Playa del Rey. The Project would be near the Ballona Wetlands Ecological Reserve, which has undergone a great deal of recent study through the preparation of environmental documents for the Ballona Wetlands Restoration Project. The environmental setting described below is summarized from the recent Environmental Impact Statement/Environmental Impact Report (EIS/EIR) prepared for the Ballona Wetlands Restoration Project (ESA 2017).

### **5.1 CLIMATE**

The coastal Southern California climate is classified as Mediterranean, with mild winters and dry summers. The average annual temperature is 66 degrees Fahrenheit. Rain primarily falls in the winter, and the average annual rainfall is approximately 15 inches (Douglas et al. 2015). The Project area is located close to Santa Monica Bay and the Pacific Ocean. The climate of the area tends to be mild, with June through August being the hottest months; however, seasonal coastal fog often keeps summer temperatures down. Humidity hovers around 65 percent due to the proximity of the bay (Douglas et al. 2015). Prior to modern and historic-period development, the Ballona Wetlands area provided several plant and animal resources for sustaining large Native American populations.

### **5.2 GEOLOGY**

The Project is situated within the greater Peninsular Ranges Geomorphic (Physiographic) Province (Yerkes et al. 1965). Ballona Creek is situated within the Los Angeles Basin, which is defined by Yerkes et al. (1965) as the area south of the Santa Monica Mountains and Elysian, Repetto, and Puente Hills; west of the Santa Ana Mountains; southwest of the San Joaquin Hills; and north and east of the Pacific Ocean (excluding the Palos Verdes Peninsula). The Los Angeles Basin has been subsiding and filling, predominantly with marine sediments from the middle Miocene (circa 13 million years ago (Ma)) to the late Pleistocene (circa 10 thousand years ago (Ka)) (Yerkes et al. 1965).



## Ballona Creek Trash Interceptor™ Pilot Project Cultural Resources Assessment

### 6.0 CULTURAL BACKGROUND

A brief summary of prehistoric, ethnographic, and historic background of the APE that provides an overview of the cultural context is provided below.

#### 6.1 PREHISTORY

Humans have lived in Southern California for at least 10,000 years, and several chronologies have been proposed to divide different periods of cultural habitation and development. The most commonly used cultural chronology (Wallace 1955) divides human occupation of Southern California into five broad periods: the Paleoindian Period (10,000 years before present [BP] to 8000 BP), the Early Period or Millingstone Horizon (8000 BP to 3000 BP), the Middle Period or Intermediate Horizon (3000 BP to 1000 AD), the Late Prehistoric Period (1000 to 1770 AD), and the Historic Period (1770 AD to present). Each of these periods is distinguished by different patterns and types of material culture. However, recent studies suggest that Native Americans reached the Southern California coast as a result of coastal migrations as early as 12,000 years ago by sea, evidenced by sites found in the Channel Islands to the north of the APE, a theory known as the Kelp Highway Hypothesis (Erlandson et al. 2007).

Large-fluted or leaf-shaped projectile points from the Paleoindian Period indicate a reliance on hunting large animals. Human diet during this period probably included smaller game and harvested plants. Sites representing this period have been found mostly inland at prehistoric lakebeds (e.g., China Lake, Tulare Lake) (Wallace 1955, 1978). The Native American population closer to the coast, with its large assortment of marine life, likely used these resources as well.

The Early Period or Millingstone Horizon, as the name suggests, was characterized by the widespread adoption of millingstones, including metates and manos used in the preparation of plant- and seed-based foods. Subsistence on terrestrial game supplemented the diet of people during this time (Wallace 1978:28). During the Middle Period or Intermediate Horizon, subsistence expanded to a greater diversity of plant and animal foods. Tools used during this period included mortars and pestles, likely indicating a new reliance on hard nut foods, such as acorns (Wallace 1978:30).

During the Late Prehistoric Period, the Tongva (Gabrieleno), Acjachemen (Juaneño), and Payómkawichum (Luiseño) lived throughout much of the Southern California coastal area extending from present-day southern Los Angeles County to northern San Diego County. Villages among these groups were permanent to semi-permanent, with seasonal camps (Byrd and 2007).

More recent work specific on the Ballona Area has refined the chronology for the area into four cultural periods occurring from 12,000 BP to 1542 AD: Paleocoastal Period, Millingstone Period, Intermediate Period, and Late Period. These refinements in the chronological periods were due to updated findings within the archaeological record recorded in the Southern California region, and they assume that human use of the area also changed as the landscape changed from a large river valley to open bay and wetlands (Douglas et al. 2015).



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## 7.0 ETHNOGRAPHY

The Project is within lands that were once inhabited by the Tongva, today known as the Gabrielino, resulting from their forced assimilation into the Spanish Mission system. The Tongva come from an Uto-Aztecan (or Shoshonean) group that likely entered the Los Angeles Basin as recently as 1500 BP, from the southern Great Basin or interior California deserts. However, it is also possible that they migrated in successive waves over a longer period of time beginning around 4000 BP. It has been proposed that the Uto-Aztecan speakers displaced local Hokan occupants of the southern coast (Kroeber 1925:578–580) as Hokan language speakers in the area are represented by the Chumash to the north and the Diegueño to the south. Much of the review of the Tongva presented here is based on William McCawley's book, *The First Angelinos* (1996).

The Tongva lived in an area of more than 1,500 square miles that included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers, and Rio Hondo, as well as the southern Channel Islands. There were at least 50 residential communities or villages, each with 50 to 150 individuals. Each community consisted of one or more lineages associated with a permanent territory represented by a permanent central settlement, with associated hunting, fishing, gathering, and ritual areas. A typical settlement had a variety of structures used for daily living, recreation, and rituals. In the larger communities, the layout was a little more intricate, characterized by a ritualistic or sacred enclosure that was encircled by the residences of the chief and community leaders, around which were smaller homes for the rest of the community. Sweathouses, cemeteries, and clearings for dancing and playing were also common at larger settlements (McCawley 1996:32–33).

Tongva subsistence was inclusive of many surrounding resources, including forest, water, and mountain animals. These included mule deer, pronghorn, rabbits, small rodents, freshwater and maritime fish and shellfish, sea mammals, snakes, lizards, insects, quail, and mountain sheep. Botanical resources included native grass seeds, pine nuts, acorns, berries, and fresh greens and shoots. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Shipek 1978). Food resources were managed by the chief, who was in charge of food reserves, and families were known to keep aside rations for times when resources were less abundant. A complex trade network among themselves and their neighbors made the Tongva among the most materially wealthy of California's Native American groups (McCawley 1996:141).

As with many other Native American groups, the settlement of Europeans in California brought many conflicts and disease as the Spanish sought to claim the lands as their own, and in the process incorporated Native American groups into the mission system.



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## 8.0 HISTORICAL BACKGROUND

Europeans first sailed up the coast of California in 1542 as part of a Spanish exploration expedition led by Captain Juan Rodriguez Cabrillo. Cabrillo sailed into San Pedro Harbor and called it “Bahía de los Fumos” (Bay of the Smokes) due to the Indian campfires he observed along the shores (Kipen 2011:25). It is estimated that the Tongva people numbered approximately 5,000 individuals at this time, spread across hundreds of villages throughout the Los Angeles Basin and the Channel Islands, though the population was possibly as large as 10,000 (Kroeber 1925:883; Lepowsky 2004). Cabrillo reported passing by a large Tongva village on the west bank of the Los Angeles River (King 2000:65). A Gabrielino-Tongva village or “rancheria” known as Guaspet or Guasna was reported to be in the Project vicinity.

Spain would not resume in-depth exploration and settlement of the region until much later, when Russian and French encroachment threatened Spain’s interests in the territories known as Alta California (Upper California). The return of Spanish presence in California was highlighted by the 1769 expedition led by Captain Gaspar de Portolá (Treutlein 1968:291). Shortly thereafter, Spain began to establish a system of pueblos, presidios, ranchos, and missions along the California coast to bolster Spanish settlement and political presence.

The Spanish Franciscan missionaries established a system of 21 missions, including the San Gabriel Mission along El Camino Real in present day Los Angeles. Using force or coercion, much of the Native American population was thrown into the process, leading to increasingly hostile relationships between Europeans and Native Americans. This period witnessed the decimation of Native American peoples throughout Southern California through disease, loss of territories, incorporation into the Spanish mission system, and physical conflict. While some Native people survived, most experienced great loss of their culture, traditions, and ways of life despite their efforts to survive the waves of colonization.

As part of this network of Spanish presence, the City of Los Angeles was established in 1781, with 11 families brought in from San Gabriel Mission. Based on mission baptism records, the Gabrielino-Tongva rancheria or village of Guaspet, or Guasna, located near the APE, was occupied from about 1790 to 1820 (Reddy 2015), with 193 people reported baptized at the rancheria. The Spanish drastically altered the lifeways of Native Americans, as did Mexican independence in 1821, the secularization of mission lands, the Mexican American War, and American sovereignty in California. All incursions encroached upon the traditional lands and destroyed Native American populations. Over the colonial period, tens of thousands of Native Americans perished.

### 8.1 BALLONA CREEK AREA HISTORY

The area surrounding Ballona Creek and what is present-day Marina del Rey was initially part of a vast wetland ecosystem made up of tidelands and saltmarshes, known as Ballona Lagoon. Ballona Creek got its name from the original Mexican rancho, La Ballona, which included the subject area and extended over large parts of what is now Culver City, Marina del Rey, Playa del Rey, and Venice.



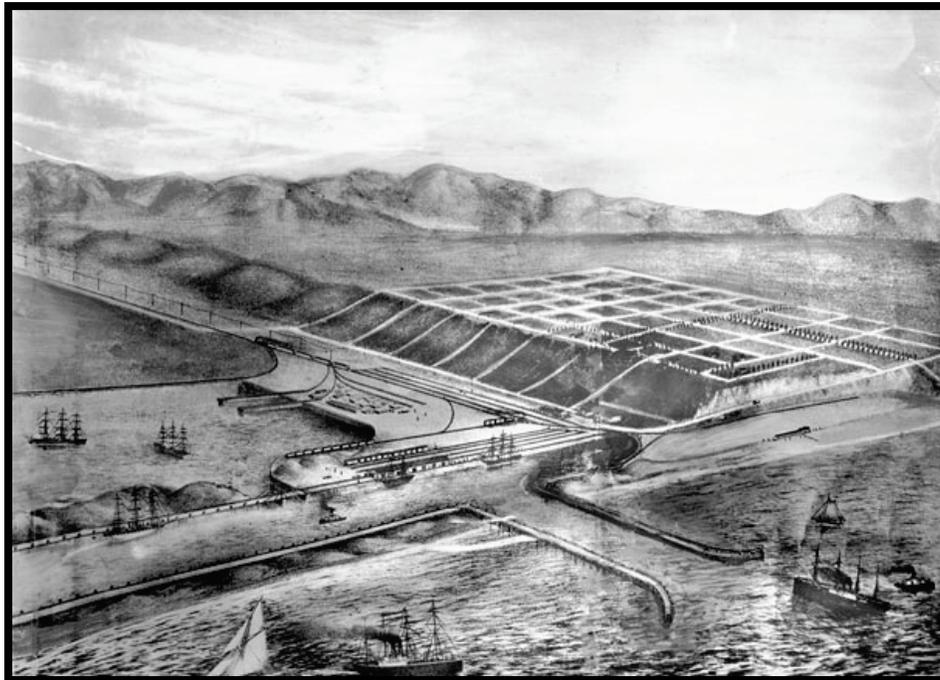
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During and after the Spanish period, the Ballona Creek area was used for grazing of cattle, with some buildings and improvements, such as irrigation systems for crops and vineyards. The land remained largely undeveloped wetlands with some agricultural use through the early American period until the later portion of the 19th century (Caltrans 2000). The Talamantes family and Augustin Machado managed to remain in possession of the area following Mexican Independence in 1821. Following a church land concession, the Rancho La Ballona was formally granted to them under American rule in 1839, with the Talamantes family eventually losing their portions, while Machado's interest was left to his heirs following his death.

Parts of the Rancho La Ballona land grant would later be sold and used for agriculture, racetracks, and oil development in the 19th century and later for housing developments.

In 1886, Moyer L. Wicks formed the Ballona Harbor and Improvement Company with the goal of dredging a channel and harbor at Ballona Lagoon to develop a harbor in Los Angeles (**Figure 3**). In support of this goal, the Ballona Harbor and Improvement Company partnered with the Central California Railway Company – an affiliate of the Atchison, Topeka & Santa Fe Railroad – to construct a rail line to the area, which was completed in 1887. Completion of the rail line combined with the harbor plans and the town of Port Ballona (to be located on the bluffs) could have resulted in a significant Los Angeles area port; however, the Ballona Harbor and Improvement Company was unable to secure funding. The lack of financial backing was partially due to economic uncertainty following the Panic of 1893 (City of Los Angeles 2013).



**Figure 3. 1880s Rendering of Port Ballona**

Source: University of Southern California Digital Library, Pierce Photography Collection.



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By 1902, new plans for development near Ballona Lagoon were underway. However, instead of industrial shipping, the area was used for recreation. Much of the coastline throughout the Los Angeles area during this period was becoming increasingly developed with beachfront resort communities. The population growth of Los Angeles and the construction of the vast Pacific Electric Railroad Company provided people from around the region with accessible recreational opportunities along the Pacific Ocean.

The Beach Land Company acquired portions of the original Port Ballona and moved forward with creating subdivisions. The lagoon was dredged, creating a new seaside lake that presented citizens and visitors with a variety of recreational opportunities, including fishing, sailing, swimming, and duck hunting. The Hotel del Rey was constructed and supplemented with other amenities, including a boathouse, large beachside pavilion, a race speedway, boathouses, and piers. These facilities were all accessible to visitors from the Pacific Electric Railroad's Ballona stop, whereas wealthy residents in the newly created bluff community had direct access via an inclined funicular rail system (City of Los Angeles 2013). However, despite the renewed interest and increased developments, large portions of the area, particularly to the south, remained undeveloped as increasing industrial and sanitation uses were implemented, including sewage treatment and outflow.

In the 1920s, the Hotel del Rey burned, and the resort area around Ballona quickly declined. This was exacerbated further through the 1930s as residential development in the immediate area remained low. Industrial uses to the north, particularly near the community of Westchester, became increasingly common, especially in relation to the development of the aviation industry. In the late 1920s, exploration and production oil wells became an increasingly common sight following the discovery of the Venice Oil Fields and increased production in the nearby Baldwin Hills (City of Los Angeles 2013).

Between 1933 and 1938, Ballona Creek underwent an extensive channelization project. Initial channelization projects were conducted in the previous decades, including the construction of the original outlet channel. According to some accounts, this occurred as early as 1916 and continued into the 1920s as part of the development for the Ballona Lake area (Daly & Associates 2015). In 1933, the outlet channel was expanded with new levees constructed along the initial channel length and extended several miles inland (Cohan 1933).

In 1938, large-scale flooding in the Los Angeles River Basin led to the passing of the federal Flood Control Act, which allocated funds for the channelization of several Los Angeles waterways, including Ballona Creek. The Works Progress Administration and USACE dredged and straightened the channel, and developed large levees and embankments as part of the overall channelization project. The channelization of Ballona Creek left only small portions of the pre-existing wetlands intact along the course of the new channel (**Figure 4**). Improvements continued over the following years, including the construction of holding basins in the 1940s and the completion of the initial jetties in 1940 (USACE 1947).<sup>1</sup>

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<sup>1</sup> Note: alternatively, the 1999 U.S. Army Corps of Engineers *Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual, Los Angeles County Drainage Area, California* states that the jetties from Vista Del Mar to the mouth of Ballona Creek were completed in 1939 instead of 1940.



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**Figure 4. Circa 1947 Photograph of the Ballona Creek Channel with the Jetties and the Pacific Avenue Bridge Located at the Center**

Source: California State Library, California History Room Picture Collection.

During the post-war period, the population in Southern California grew exponentially. Large areas throughout the region that were previously undeveloped or being used for agriculture were purchased, subdivided, and developed for residential uses. The area around Ballona Creek was no exception, as Westchester, Playa del Rey, and other existing neighborhoods in the vicinity became increasingly established residential communities. The largest change occurred in the 1960s, with the development of Marina del Rey. The planned harbor community designed by architect Victor Gruen, who is most famously credited with inventing the shopping mall building type, was to be constructed around a central harbor that used large portions of the original Ballona Lagoon. The entrance to the harbor was constructed directly north of the Ballona Creek Channel and, sharing the pre-existing jetty infrastructure, a new breakwater was constructed to provide protection (**Figure 5**). Over the 1970s and 1980s, Marina del Rey continued to be developed as it became increasingly popular for its immediate beach access, featuring a mix of building types and architectural styles (City of Los Angeles 2013).



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**Figure 5. 1968 Aerial Photograph of Marina del Rey with the Breakwater and New Harbor Channel at Center and Ballona Creek at Right**

Source: Los Angeles Public Library.



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## 9.0 CURRENT AND PREVIOUS LAND USE

The proposed APE is within the Ballona Creek Channel, a reconstructed channelized waterway that within the APE has embankment protection of flanking jetties composed of stone and riprap with a sandy bottom. The Ballona Creek channel was constructed as a flood control measure in the first half of the 20th century and is presently serving the same function.

## 10.0 METHODOLOGY

The cultural resources investigation included a review of known documentation, a CHRIS records search, an SLF Search with the NAHC in Sacramento, development of site-specific contexts, and a pedestrian survey of the APE, including the jetties and Pacific Avenue Bridge.

### 10.1 RECORDS SEARCH RESULTS AND LITERATURE REVIEW

The Ballona Creek area is generally sensitive for prehistoric, ethnographic, and Tribal Cultural Resources. It is highly unlikely that intact archaeological remains are present within the small direct impact areas (the jetties) as they were built in the 20th century. This does not preclude Native American interest in the Project. The recently completed Draft EIS/EIR for the Ballona Wetlands Restoration Project provides a comprehensive review of past cultural resources work within the Ballona Wetlands (ESA 2017). Included in the review is the work by Altschul et al. (1991) regarding the prehistoric components that are present throughout the Ballona Wetlands. The large number of sites in the area resulted in Altschul et al. (1991) developing the Ballona Lagoon Archaeological District (BLAD). The BLAD was conceived as an NRHP-eligible district that encompasses the Ballona Lagoon and, “associated prehistoric archaeological sites around its margins, as the conceptual fabric for examining the archaeological resources in the greater Ballona area collectively, as parts of an adaptive system centered on the lagoonal environment” (Altschul et al. 1991).

The BLAD includes archaeological site, CA-LAN-54, which is a prehistoric archaeological site originally recorded in the 1950s by William Deane as a shell midden. Excavations in 2014 uncovered human burial features, ground and pecked stone artifacts, chipped stone artifacts (including dart-sized projectile points), and bone artifacts, such as barbs, awls, tubes, and beads. This site was radiocarbon dated to 2,770 (+/-40) to 3,880 (+/-50) BP. The site was determined to be eligible for listing in the NRHP by USACE, with concurrence from the State Historic Preservation Officer on February 1, 2001 (Altschul 2003), as a contributor to the BLAD. The key takeaway is that the boundaries of the BLAD as designed would subsume all of the lands around the outfall of Ballona Creek prior to dredging and construction of the jetties.

On June 8, 2020, a cultural resources archival records search was conducted by SCCIC located at California State University, Fullerton. The records search was conducted for the Ballona Creek Trash Interceptor™ Pilot Project footprint and a 0.5-mile radius around the Project to identify any historic



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properties and previous studies specific to the Project area and APE, as well to provide supplemental information on the surrounding context.

The search included a review of all previously recorded prehistoric and historic archaeological sites located within a 0.5-mile radius of the Project area, as well as a review of all known cultural resource survey reports, excavation reports, and regional cultural overviews. The search returned no reported cultural resources within the Project footprint, although two reports, LA-7185 and LA-11177, are previous studies conducted within the Project area.

Additionally, the search identified two historic archaeological sites, one historic structure, one historic object (Table 1), and an additional 17 reports pertaining to previous studies conducted within the 0.5-mile radius (Table 2). None of the cultural resources identified in the immediate area were evaluated for archaeological determination of eligibility because they are located outside the Project footprint and the proposed APE.

**Table 1: Cultural Resources within a 0.5-Mile Radius of the Project**

Primary No.	Other IDs	Type	Age	Attribute Codes	Recorded By	Reports
P-19-004713	Resource Name – ESA-BR-001H	Site	Historic	AH04 (Privies/ dumps/ trash scatters)	2015 (M. Vader, ESA)	LA-13363
P-19-004715	Resource Name – SR-3	Site	Historic	AH04 (Privies/ dumps/ trash scatters)	2015 (M. Vader, ESA)	LA-13363
P-19-187805	Resource Name – Ballona Creek Flood Control Channel & Drainage System; Other - 07-LA-1-KP 48.9/49.4 EA166061	Structure	Historic	HP20 (Canal/aqueduct)	2000 (D. Kane, Caltrans); 2015 (Pamela Daly, Daly & Associates)	LA-12677 LA-12722 LA-12757 LA-13264
P-19-192324	Resource Name – ICF-BS-010H	Object	Historic	AH07 (Roads/trails/ railroad grades)	2010 (R. Mitchell, ICF)	



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**Table 2: Cultural Resource Projects Conducted within a 0.5-Mile Radius of the Project**

Report No.	Year	Author(s)	Title	Affiliation	Resources
LA-07185	2004	Foster, John M.	Archaeological Investigation for Venice Pumping Plant Dual Force Main Project	Greenwood and Associates	19-000066
LA-11177	2008	Cappellino, Steve, Joshua Burnam, Lennie Rae Cooke, and Jack Malone	Entrance Channel Maintenance Dredging of Contaminated Sediments at Marina Del Rey Harbor - Public Draft Supplemental Environmental Assessment (SEA)	U.S. Army Corps of Engineers	
LA-00027	1974	Rozaire, Charles E.	Del Rey/Strand Environmental Impact Report	Engineering Service Corp.	
LA-00188	1976	Hector-Kaufman, Susan	Evaluation of the Area Known As Tentative Tract 31351, Los Angeles County, an Environmental Impact Report.	University of California, Los Angeles Archaeological Survey	
LA-00436	1979	Pence, Robert L.	Archaeological Assessment of the Summa Corporation Property, Culver City, Los Angeles County		19-000054 19-000059 19-000060 19-000061 19-000062 19-000063 19-000064 19-000065 19-000193 19-000203 19-000204 19-000206 19-000211 19-000212 19-000213 19-000216 19-001018
LA-01282	1983	Padon, Beth	An Archaeological Assessment of the Playa Sol Project in the City of Los Angeles	Beth Padon	
LA-01626	1987	Woodward, Jim	Archaeological Survey of Dockweiler State Beach Los Angeles	California Department of Parks and Recreation	
LA-04868	2000	Shepard, Richard S.	Cultural Resources Records Search and Paleontologic Resources Literature Review Report for the Sempra Energy Gas Lease Sale Project Area, Playa Del Rey and a	Chambers Group, Inc.	19-000064 19-000065 19-000203 19-000204 19-000206



**Ballona Creek Trash Interceptor™ Pilot Project**  
Cultural Resources Assessment

Report No.	Year	Author(s)	Title	Affiliation	Resources
			Portion of the City of Los Angeles, Los Angeles County, California		
LA-05556	1977	Tillman, Donald C.	Historic Property Survey: Vista Del Mar - Culver Boulevard to Napoleon Street	City of Los Angeles	
LA-05559	2000	Duke, Curt	Cultural Resource Assessment for AT&T Wireless Services Facility Number R319 County of Los Angeles, California	LSA Associates, Inc.	19-000066 19-001716
LA-06570	1991	Swanson, Mark T.	Playa Vista Archaeological and Historical Project, Technical Report 1. Visual and Aesthetic Impact of the Playa Vista Project on Adjacent Properties 45 Years of Age and Older.	Statistical Research, Inc.	
LA-07724	1999	Keller, Angela H.	Playa Vista Archaeological and Historical Project, Technical Report 9. Evaluation of SR10, a Nonarchaeological Assemblage in the Ballona Wetlands, Marina Del Rey, California	Statistical Research, Inc.	19-000047 19-001932 19-001933 19- 001970 19-002676
LA-07725	2001	Altschul, Jeffrey H.	Playa Vista: Archaeological Treatment Plan for CA-LAN-54	Statistical Research, Inc.	19-000054
LA-09481	1991	Altschul, Jeffrey H., Richard S. Ciolek-Torrello, Jeffrey A. Homburg, and Mark T. Swanson	Playa Vista Archaeological and Historical Project Research Design. Statistical Research Technical Series No. 29, Pt. 1.	Statistical Research, Inc	19-000029 19-000054 19-000060 19- 000062 19-000078 19-000193 19- 000211 19-001698
LA-10152	2007	Anonymous	Playa Vista Archaeological and Historical Project (PVAHP). Programmatic Agreement, Playa Vista Project, Annual Reports, September 1996 through 2007.	Statistical Research, Inc.	19-000054 19-000060 19-000062 19- 000193 19-000211 19-001932 19- 002676 19-002768 19-187548
LA-10880	2007	Trinh, Phoung	Tahiti Marina application for Department of the Army authorization	Department of the Army Corps of Engineers	19-000047 19-000337 19-001596



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Cultural Resources Assessment

Report No.	Year	Author(s)	Title	Affiliation	Resources
					19- 001698 19-186163 19-186164 19-186165
LA-11138	1987	Pierson, Larry, Shiner, Gerald, and Slater, Richard	California Outer Continental Shelf, Archaeological Resource Study: Morro Bay to Mexican Border, Final Report.	PS Associates	
LA-12989	2015	Anonymous	Survey LA, Los Angeles Historic Resources Survey: Historic Resources Survey Report Venice Community Plan Area	Historic Resources Group	
LA-13363	2016	Vader, Michael and Michael R. Bever	Ballona Wetlands Ecological Reserve Restoration Project, Los Angeles, California, Extended Phase I and Phase II Archaeological Testing Report	ESA	19-001970 19-004713 19-004714 19- 004715 19-004716 19-101357

## 10.2 NATIVE AMERICAN NOTIFICATION/SACRED LANDS FILE SEARCH

NAHC in Sacramento holds records of Native American sacred sites and burial sites in the SLF. NAHC also maintains records of individuals that have particular expertise and knowledge of Native American resources. NAHC was contacted with a request to conduct a SLF search for the Project. The response was received on April 15, 2020, indicating that the search results were positive, and that Gabriellino Tongva Indians of California Tribal Council should be contacted for more information. Furthermore, NAHC provided a list of Native American contacts that may have additional knowledge of cultural resources in the Project area. Native American consultation is pending coordination with USACE.

## 10.3 FIELD METHODS

A pedestrian survey of the Project APE was conducted on March 6, 2020, by Stantec Cultural Resources Director Mitch Marken, Ph.D., RPA, LEED. The APE was accessed via Pacific Avenue, where it terminates at the Pacific Avenue Bridge in Playa del Rey. Native soils were not visible, although imported soils with patches of grass sporadically on jetty tops were visible at select locations, as was the concrete pathway on top of portions of the channel embankment; rock construction of the jetties, and paved road surfaces. The survey was conducted on a sunny day, with an average temperature of 75 degrees Fahrenheit. Transects were walked along both jetties north and south of the bridge and over the bridge, with inspections under the bridge. The bridge, jetties, and proximal structures were photographed for further analysis.



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## 11.0 SURVEY RESULTS

No archaeological resources were observed during the survey. The APE does contain three built environment resources adjacent to the Project.

### 11.1 BALLONA CREEK NORTH AND SOUTH JETTIES AND BALLONA CREEK CHANNEL

The Ballona Creek North Jetty, initially constructed in the mid-1930s and expanded over the following decades, is located on the north side of Ballona Creek in Marina del Rey, California. The mile-long jetty assists in channelization of Ballona Creek and the protection of Marina del Rey Harbor. The Ballona Creek North Jetty consists of riprap, a combination of broken concrete blocks and jetty stone, and has a grouted cap. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and a beacon light for boats coming back to the harbor. On the Ballona Creek North Jetty there are also two viewing decks, which include concrete benches and guardrails.

The south side of the Ballona Creek Channel is supported by a shorter jetty, the Ballona Creek South Jetty, which also consists of riprap and a grouted cap (**Figures 6 through 10**).

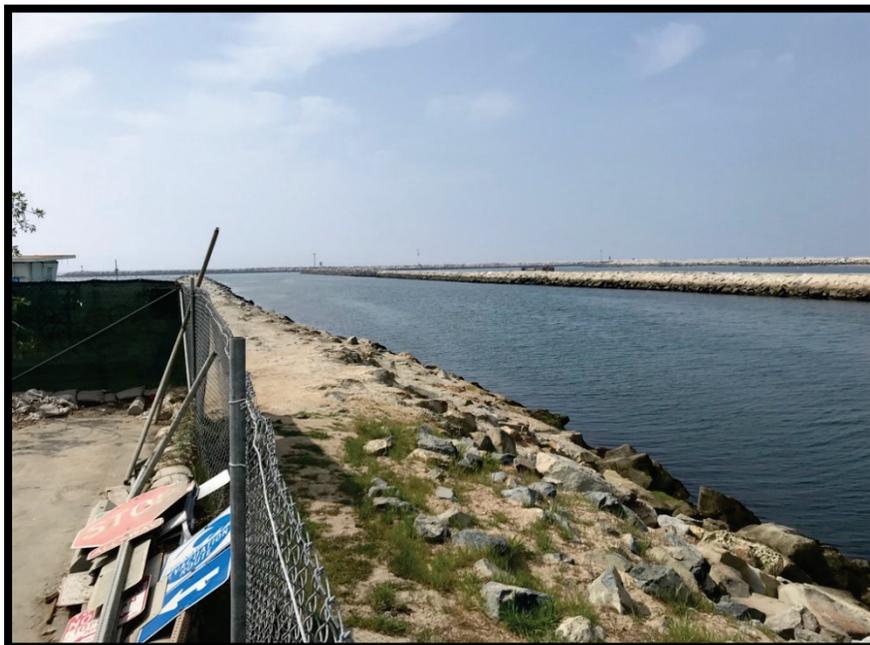
The existing channel was largely constructed between 1933 and 1938, although various improvements to the creek occurred during the 1920s through the 1960s.



**Ballona Creek Trash Interceptor™ Pilot Project**  
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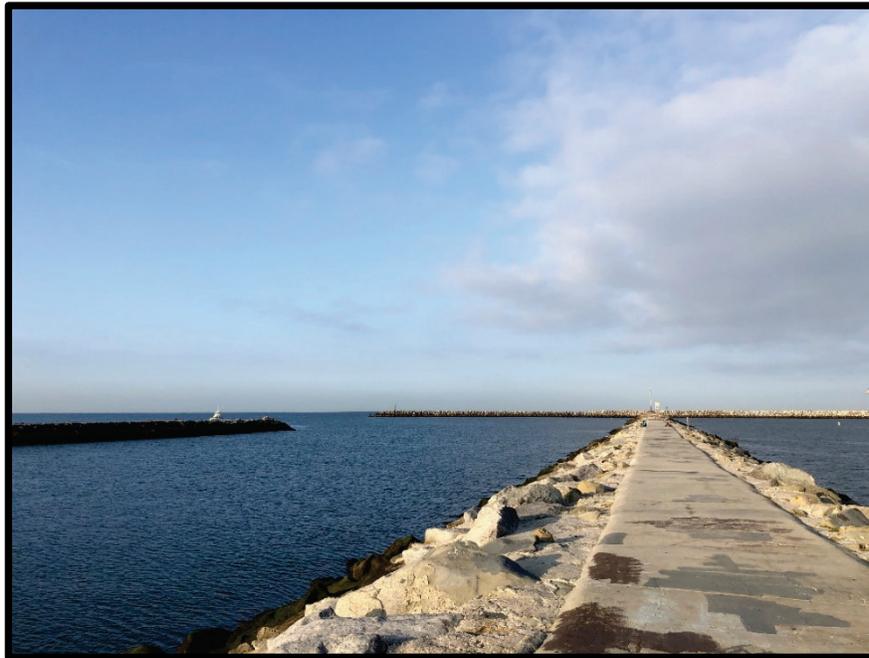
**Figure 6. View from Ballona Creek North Jetty Looking Towards Pacific Avenue Bridge and the Ballona Creek South Jetty**



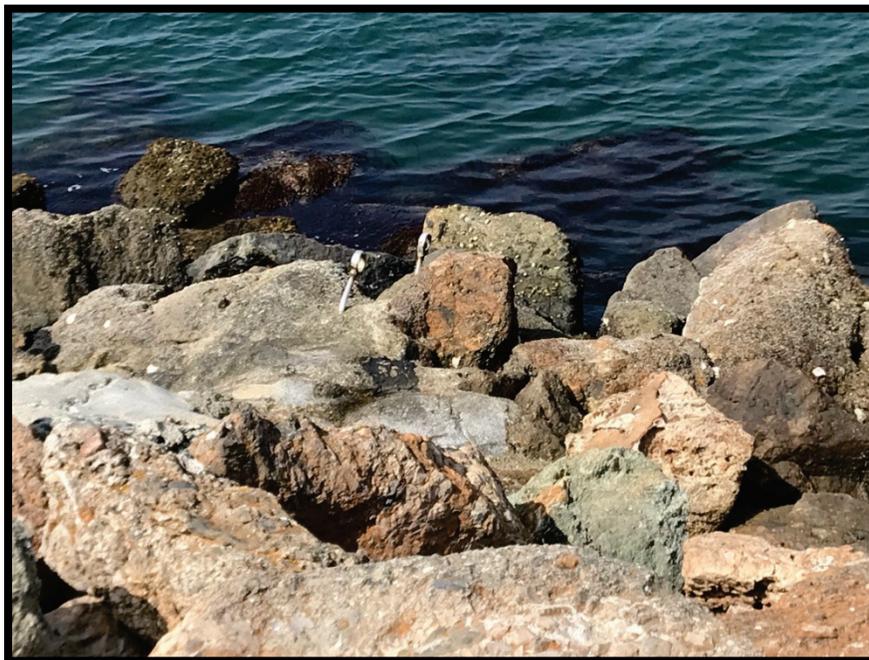
**Figure 7. View of the Ballona Creek North and South Jetties, Looking West from the South Side of Ballona Creek**



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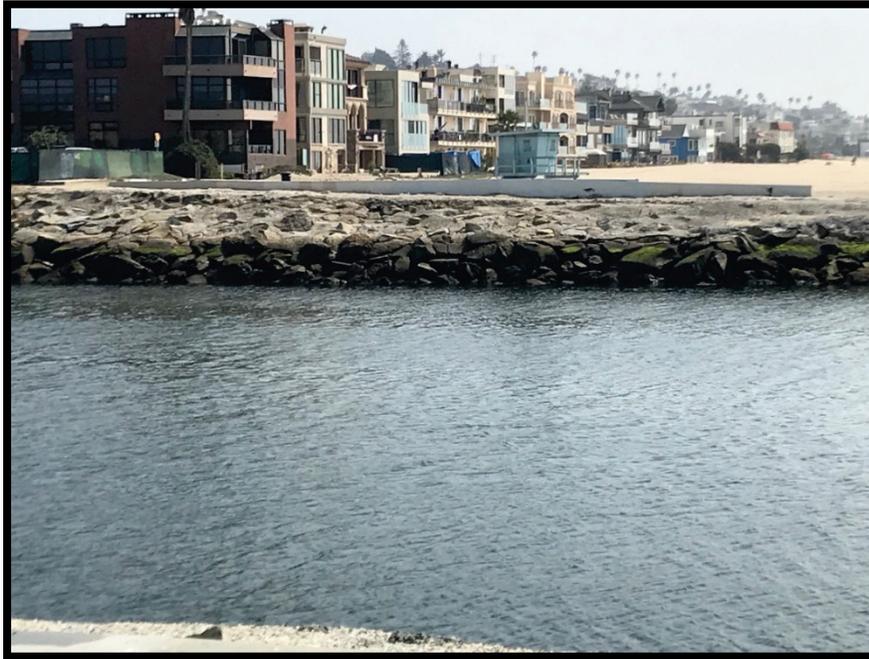
**Figure 8. View of Ballona Creek North Jetty Looking West from the top of the North Jetty**



**Figure 9. Rock, Concrete, and Existing Anchor Ties at Ballona Creek South Jetty**



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**Figure 10. Ballona Creek South Jetty, View from Ballona Creek North Jetty**

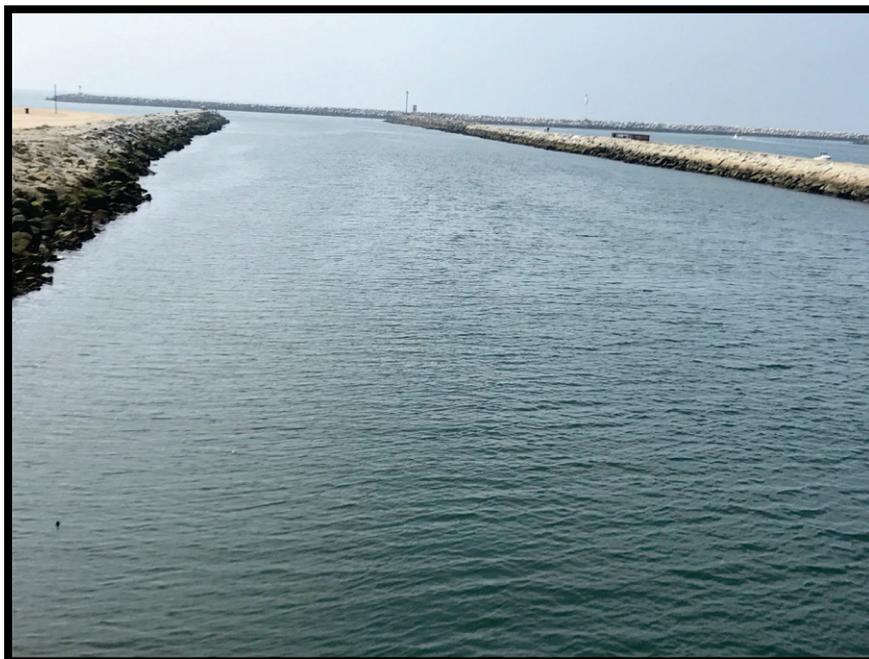
## **11.2 MARINA DEL REY BREAKWATER**

Constructed in 1963, the Marina del Rey Breakwater (**Figure 11**) is located perpendicular to the mouth of Ballona Creek and the entrance to the Marina del Rey Harbor. It absorbs and reduces the impact of ocean waves on the shore and the harbor. The 0.5-mile long detached breakwater is primarily composed of rock fill topped by large cap stones. It also has two navigational beacons: one on the north end and one on the south end.



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**Figure 11. View of Marina del Rey Breakwater West of and Perpendicular to Ballona Channel**

### 11.3 PACIFIC AVENUE BRIDGE

Constructed in 1928, the Pacific Avenue Bridge crosses Ballona Creek (**Figures 12 through 14**) 0.5-mile upstream from the mouth. It is a 360-foot concrete deck girder bridge for pedestrians and bicycles and is part of the Ballona Creek Bike Path. The bridge is supported by three concrete piers in the creek and concrete abutments in the jetties on the north and south ends. The piers are topped by steel bearings that are bolted to the steel girders. The steel girders support the concrete slab bridge deck. The bridge deck has concrete guardrails with rectangular openings.



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**Figure 12. Ballona Creek-Pacific Avenue Bike and Pedestrian Bridge. View towards Marina del Rey**



**Figure 13. Pacific Avenue Bridge Support System**



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**Figure 14. Original Construction Detail – Pacific Avenue Bridge**

## **12.0 HISTORIC PROPERTY (NATIONAL REGISTER OF HISTORIC PLACES) ANALYSIS**

### **12.1 PACIFIC AVENUE BRIDGE**

The Pacific Avenue Bridge was identified and evaluated in November 2013 as part of the SurveyLA historic resources survey. Constructed in 1928, the Pacific Avenue Bridge was found to be eligible for listing in the NRHP under Criterion C as an “important early bridge spanning Ballona Creek in the Playa del Rey Community” (City of Los Angeles 2013). It has an identified period of significance of 1928, which is associated with its original construction, and is noted for retaining sufficient integrity to convey its significance.<sup>2</sup>

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<sup>2</sup> The bridge was also identified as eligible for listing on the CRHR and for designation as a Los Angeles HCM under Criterion 3 for both state and local designations.



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Additionally, the survey determined the bridge meets several eligibility standards:

- Retains most of the essential physical features from the period of significance
- Embodies distinctive characteristics of a type, period or method of construction
- Significant for physical design or construction, including architecture, landscape architecture, engineering, and artwork

**Conclusion:** The Pacific Avenue Bridge qualifies as a historic property for the purposes of Section 106 consultation.

## 12.2 BALLONA CREEK CHANNEL, BALLONA CREEK NORTH AND SOUTH JETTIES

### 12.2.1 Year 2000 Evaluation

In August 2000, Dr. Diane Kane with Caltrans prepared California Department of Parks and Recreation (DPR) 523 Forms specific to the Ballona Creek Flood Channel and Drainage System. These DPR 523 Forms include a brief description of the Ballona Creek drainage system and channel, as well as historic context covering the development of the Ballona Creek area and the Los Angeles County Flood Control program. This analysis was conducted in support of the Historic Property Survey Report for the CA-1 Widening Project.

The 2000 DPR 523 Forms reported that the Ballona Creek Flood Control and Drainage System may be a potential contributor to the discontinuous thematic historic district of Los Angeles Flood Control Dams, which was determined eligible for the NRHP under Criteria A and C in December 1999. The 2000 evaluation of the Ballona Creek system presented the following findings:

*The Ballona Creek Channel does not appear significant under Criterion C, particularly in relation to the Los Angeles Flood Control Dams thematic historic district. Individually, the channel exhibits typical engineering to that period. Additionally, the channel was constructed outside the original Flood Control program and is not associated with the broader design of the Los Angeles Flood Control Dam thematic historic district.*

*The Ballona Creek appears to be likely significant under Criterion A for its associations with reclamation of the Ballona Lagoon and the eventual development of this portion of west Los Angeles, particularly the development of Marina del Rey. However, it was noted that the resource itself and its relationship with Marina del Rey, which occurred in the 1970s and 1980s, had not yet reached 50 years of age and did not appear to be historic at that time.*

The evaluation done in 2000 by Kane noted that the Ballona Creek Channel should be re-evaluated as a potential contributor to the Los Angeles County Flood Control Dams thematic historic district once it becomes 50 years old. Bridges, jetties, culverts, basins, and other elements along the Ballona Creek Channel system were identified as associated resources but were not discussed in detail. In 2015, Daly analyzed the Ballona Creek Channel, and her conclusions are discussed below.



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#### 12.2.2 Year 2015 Evaluation

In 2015, Pamela Daly of Daly & Associates prepared DPR 523 Form updates for the Ballona Creek Channel in support of the Ballona Wetlands Restoration Project. Specifically, the 2015 update looked at the segment of the Ballona Creek Channel between the Marina Expressway and State Route 99 to the east, extending towards the Pacific Ocean to the west. This documentation included a brief description of the segment and property history, and an updated evaluation that responds to the previous work conducted by Caltrans in 2000.

The 2015 evaluation states that the previous evaluation is based upon the premise that Marina del Rey was directly related to the channelization of Ballona Creek; however, additional information was provided that outlines that Ballona Creek was first channelized starting in 1916, and the surrounding area did undergo some development based upon reclamation activities, but the wide availability of land throughout the Los Angeles area did not create a climate where the Ballona Creek area underwent extensive development.

Daly's analysis goes further to state that the Marina del Rey development, which occurred in the 1970s and 1980s, is more related to post-war housing development and increasing shortages of developable land in the later years of the 20th century, and does not have a direct association with the development of flood control efforts in the early 20th century.

Additionally, Daly argues that most residential development that occurred in Los Angeles, as well as other parts of California, are predicated on the development of flood control measures in previous years, and, therefore, the notion that the Ballona Creek Channel has significant associations with the Marina del Rey development is unlikely. The evaluation also points out that the Los Angeles County Flood Control thematic historic district is specific to the dams themselves, as concurred upon by the State Historic Preservation Officer in 1999, and does not include the westernmost segment of the Ballona Creek Channel.

An updated evaluation of the Ballona Creek Channel was also provided. This evaluation cites the *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures* Historic Context Statement prepared by JRP Historical Consulting in partnership with Caltrans in 2000, which outlines criteria threshold guidance of water conveyance systems for NRHP eligibility. The subsequent evaluation outlines the following arguments:

- Criterion A: the Ballona Creek Channel, while funded by New Deal related programs of the 1930s, does not exemplify the era's public infrastructure projects in a way that rises to a level of significance that would qualify under this criterion.
- Criterion B: the Ballona Creek Channel has no direct associations with any prominent engineers or important persons involved in the construction of water diversion systems in the Los Angeles area.



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- Criterion C: The Ballona Creek Channel does not exemplify significant engineering or technology associated with the construction of water conveyance systems in Los Angeles or California. It is part of a larger system of typical features, which does not appear to be significant.
- Criterion D: The Ballona Creek Channel does not appear to have the capacity to yield information related to any of the associated contexts of prehistory.

Overall, the 2015 evaluation recommended that the Ballona Creek Channel was not eligible for listing on the NRHP. While evidence of concurrence is not available at this time, it is apparent from subsequent projects near the subject Undertaking that the Ballona Creek Channel has not been identified as a historic property for the purposes of Section 106 consultation, specifically the 2018 Ballona Wetlands Restoration Project, as outlined by USACE (USACE 2017).

**Conclusion:** The Ballona Creek Channel and associated features are not considered a historic property for the purposes of Section 106 consultation.

## 13.0 EFFECTS ANALYSIS

Per 36 CFR 800.5(a)(1) of the NHPA, the Criteria of Adverse Effects are applied to assess potential effects of the Undertaking on historic properties located within the associated APE:

*(1) Criteria of adverse effect. An Adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.*

The following analysis takes into consideration potential direct and indirect effects in relation to the integrity of historic properties located in the APE, specifically the Pacific Avenue Bridge.

### 13.1 PACIFIC AVENUE BRIDGE

In terms of direct and physical effects, the proposed Project would only minimally affect the Pacific Avenue Bridge. The Interceptor would be located in the creek channel and would not be directly or physically connected with the bridge in any capacity. The only impact would be the installation of monitoring equipment, which would be visible from below the bridge and would not require any major structural alterations to the components of the bridge, but rather small points of attachments at select locations that could be repaired in-kind to match the existing conditions. The bridge would be retained in its existing condition following the Project, with minimal impacts to the physical features that characterize the bridge.



## Ballona Creek Trash Interceptor™ Pilot Project

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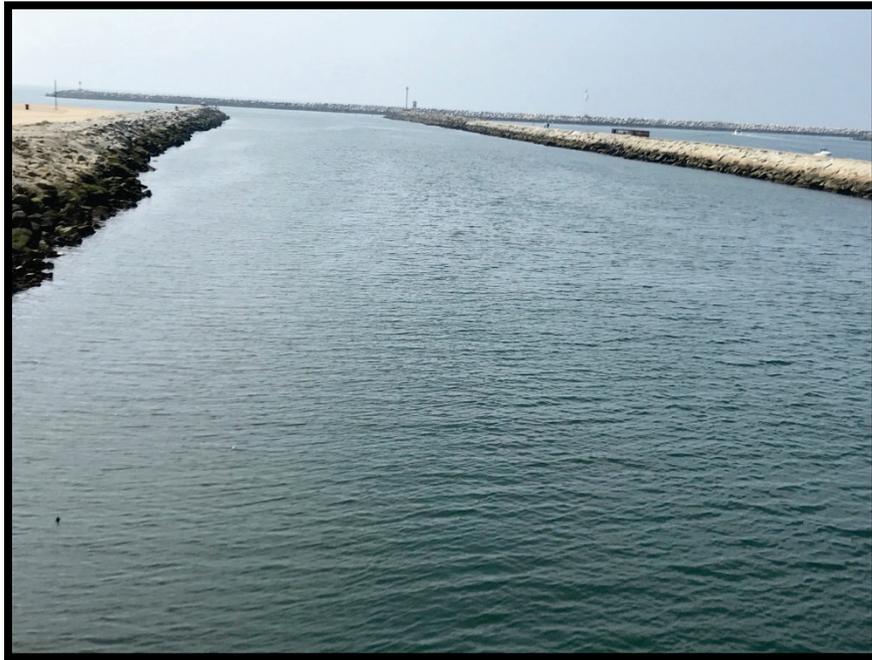
Potential indirect effects include the introduction of visual or atmospheric elements that may diminish the integrity of a property, particularly its setting and sense of place. In terms of atmospheric impacts, these would largely be temporary, and most atmospheric and audible alterations would be related to the construction of the moorings for the Interceptor™ and the trash booms. Additionally, the Interceptor™ primarily uses passive energy, particularly the directional flow of water in the channel itself to collect trash, and would not have an active mechanical component capable of producing noise that would adversely alter the existing audible conditions of the site once installed and operating.

For potential visual effects, the Interceptor™ would add a new visual element to the setting of the Pacific Avenue Bridge (**Figure 15**); however, this would not diminish the integrity of the property. First, the Pacific Avenue Bridge has been identified as significant under Criterion C for its design and architecture, specifically as an early 1920s bridge spanning Ballona Creek in the Marina del Rey area. Per the guidance included in the National Park Service' *National Register Bulletin No. 15: How to Apply the National Register Criteria for Evaluation*, the most important aspects of integrity include those related to the "physical features that characterize the type, period, or method of construction that the property represents," meaning integrity of design, workmanship, and materials (National Park Service 1995). While other aspects of setting and location are important to site-specific structures like bridges, the integral component is the relationship between the structure and the feature it was designed to cross, such as a body of water. Throughout the duration of the Project, the bridge would continue to retain its immediate relationship with Ballona Creek, which is the fundamental component to the setting of the property. The Interceptor™ would be visible from several vantage points at and near the bridge; however, the placement of the feature would be several hundred feet away and the distance would reduce any visual effects to a level that would not diminish the integrity of the property. Second, the Interceptor™ is a reversible intervention, and the existing conditions would be retained following any future removal from the channel and the associated improvements along the jetties. If removed, the placement of the Interceptor™ coupled with the temporal nature of its installation, would not result in visual impacts on the Pacific Avenue Bridge.

**Conclusion:** The Project would result in a No Adverse Effect on the Pacific Avenue Bridge.



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**Figure 15. View from Pacific Avenue Bridge West towards Marina del Rey Breakwater.**

## **14.0 RECOMMENDATIONS**

It is unlikely that the Project would impact archaeological or tribal cultural resources. One historic property, the Pacific Avenue Bridge, is within the APE of the Project. However, the above application of the Criteria for Adverse Effects determined that the Project would not diminish the identified qualities of significance of the Pacific Avenue Bridge. We therefore recommend a Section 106 finding of No Adverse Effect to Historic Properties for the Project, as currently designed.



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**Ballona Creek Trash Interceptor™ Pilot Project**

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**Ballona Creek Trash Interceptor™ Pilot Project**

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## **Appendix A NATIVE AMERICAN HERITAGE NOTIFICATION**



## NATIVE AMERICAN HERITAGE COMMISSION

April 15, 2020

Mitch Marken  
Stantec

Via Email to: mitch.marken@stantec.com

**Re: Ballona Creek Trash Interceptor Project, Los Angeles County**

Dear Mr. Marken:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Gabrielino Tongva Indians of California Tribal Council on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: [steven.quinn@nahc.ca.gov](mailto:steven.quinn@nahc.ca.gov)

Sincerely,



Steven Quinn  
Cultural Resources Analyst

Attachment



CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Merri Lopez-Keifer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**Marshall McKay**  
Wintun

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Joseph Myers**  
Pomo

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

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EXECUTIVE SECRETARY  
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[NAHC.ca.gov](http://NAHC.ca.gov)



**Ballona Creek Trash Interceptor™  
Pilot Project**

Preliminary Jurisdictional  
Wetlands/Waters Delineation Report

October 20, 2020

Prepared for:

Los Angeles County  
Public Works  
900 South Fremont Avenue  
Alhambra, California 91803-1331

Prepared by:

Stantec Consulting Services Inc.  
290 Conejo Ridge Avenue  
Thousand Oaks, California 91361

## PRELIMINARY JURISDICTIONAL WETLANDS/WATERS DELINEATION REPORT

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**BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT**  
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## Executive Summary

**Executive Summary**

The preliminary jurisdictional delineation and investigation of jurisdictional resources was performed by Stantec biologists on February 25, 2020 and March 2, 2020 for the proposed Ballona Creek Trash Interceptor™ Pilot Project (Project). The Survey Area (SA) included the Project footprint with an additional 100-foot buffer for a total of 23.2 acres.

The purpose of this report is to provide baseline data concerning the type and extent of jurisdictional resources within and adjacent to the Project in which Los Angeles County Public Works (Public Works), on behalf of the Los Angeles County Flood Control District (Flood Control District), is collaborating with The Ocean Cleanup to construct and operate within the City of Los Angeles. Jurisdictional resources considered for this report include wetland and non-wetland Waters of the United States and Rivers and Harbors Act (RHA) Section 10 Waters, regulated by the United States Army Corps of Engineers; Waters of the State (WOTS) regulated by the Los Angeles Regional Water Quality Control Board (RWQCB); California Coastal Act (CCA) wetlands regulated by the California Coastal Commission (CCC); and the bed, bank, and channels of all lakes, rivers, and/or streams (and associated riparian vegetation), as regulated by the California Department of Fish and Wildlife (CDFW).

The SA covered 23.2 acres and the delineated aquatic resources described in the report consist of federal non-wetland Waters of the United States (14.24 acres); RHA Section 10 Waters (14.24 acres), CDFW Jurisdictional Waters (15.93 acres); Waters of the State (15.93 acres) and CCC wetlands (14.24 acres). No portion of the SA meets all the three criteria required for federal wetlands (i.e., dominance of hydrophytic vegetation, evidence of wetland hydrology, and hydric soils).

The Project includes impacts to approximately 0.023 acres of non-wetland WOTUS, RHA Section 10 Waters, WOTS, CCC wetlands, and CDFW Jurisdictional Waters. However, the Project does not involve the discharge of dredge or fill material; substantially diverting or obstructing the natural flow of Ballona Creek; substantially changing or using any material from the bed, channel, or bank of Ballona Creek; nor depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into Ballona Creek; therefore, impacts to non-wetland waters of the U.S. and CDFW jurisdictional waters are not expected to occur.



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## Abbreviations

BWER	Ballona Wetlands Ecological Reserve
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
EIR	Environmental Impact Report
°F	degrees Fahrenheit
FAC	Facultative
FACU	Facultative-Upland
FACW	Facultative-Wetland
MCVII	<i>Manual of California Vegetation, 2nd Edition</i>
NRCS	Natural Resources Conservation Service
OBL	Obligate
OHWM	ordinary high water mark
MCVII	<i>Manual of California Vegetation, 2nd Edition</i>
Project	Ballona Creek Trash Interceptor™ Pilot Project
Public Works	Los Angeles County Public Works
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SA	Survey Area
Stantec	Stantec Consulting Services Inc.
USACE	United States Army Corps of Engineers
WOTS	Waters of the State
WOTUS	Waters of the United States

# BALLONA CREEK TRASH INTERCEPTOR™ PILOT PROJECT

## Preliminary Jurisdictional Wetlands/Waters Delineation Report

### 1.0 Introduction

## 1.0 INTRODUCTION

### 1.1 PURPOSE OF THE REPORT

This Draft Preliminary Jurisdictional Wetlands/Waters Delineation Report presents the findings of an investigation of potentially jurisdictional features conducted by Stantec Consulting Services Inc. (Stantec) for the Los Angeles County Public Works' (Public Works') Ballona Creek Trash Interceptor™ Pilot Project (Project) in Los Angeles, California (Appendix A, Figure 1). The assessment of jurisdictional wetlands, other "waters of the U.S.," waters of the state, California Department of Fish and Wildlife (CDFW) jurisdictional waters, and California Coastal Commission (CCC) wetlands was conducted on February 25, 2020, and March 2, 2020, by Stantec biologists Rocky Brown and Priya Pratap. This assessment was conducted to determine the extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and CCC that occur within the Survey Area (SA), an approximately 23.2 acre area that includes the Project area and a surrounding 100-foot buffer zone (refer to Figure 2 in Appendix A for a graphical depiction of the SA).

### 1.2 PROJECT LOCATION

The Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. Figure 1, Project Location Map, shows the general location of the Project. Specifically, the Project is located within an approximately 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. There are two levee systems, Ballona Creek 1 Levee System (hereafter referred to as the Ballona Creek North Jetty) and Ballona Creek 3 Levee System (hereafter referred to as the Ballona Creek South Jetty) that will be used for this Project.

The Project site is currently zoned as Open Space (OS-1XL), with a corresponding Open Space general plan land use designation by the City of Los Angeles. As Ballona Creek is an urban, soft bottom flood control channel within the Project site, the Project site is considered urbanized. The Project site is characterized by the wide, concrete embankment of Ballona Creek channel trending from east-northeast (upstream) toward the west-southwest (downstream). Ballona Creek channel includes riprap which is a combination of broken concrete blocks and rock. The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and beacon light for boats coming back to the harbor. There are also two (2) viewing decks with concrete benches and guardrail on top of the Ballona Creek North Jetty. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop.

The area surrounding the Project site is predominantly zoned Medium Residential (to the south) and Open Space (to the north). Nearby uses include the Laguna Del Rey multi-family residential complex, Del Rey Lagoon (a lagoon and recreational space), the Ballona Wetlands Ecological Reserve (BWER), University of California Los Angeles Marina Aquatic Center, the Pacific Avenue Bridge, Dockweiler Beach



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## 1.0 Introduction

(recreational and public use), and the entrance to the Marina del Rey Harbor. The Project would not be located within the BWER, which is approximately 0.22 mile to the northeast.

**1.3 PROJECT DESCRIPTION**

On behalf of the Los Angeles County Flood Control District (Flood Control District), Los Angeles County Public Works (Public Works) is collaborating with The Ocean Cleanup, a Dutch non-profit organization, on this pilot Project to deploy a floating, automated trash Interceptor™ system (the Interceptor™) near the mouth of Ballona Creek where it enters the Pacific Ocean. The Project would entail installation of the Interceptor™ in Ballona Creek, directly south and east of the Marina Del Rey harbor entrance and breakwater along the Pacific Ocean shoreline. Construction and installation of the Project would occur over approximately a six-month period.

The purpose of the Project is to test the efficiency of The Ocean Cleanup's Interceptor™ in capturing and collecting floating trash and debris in Ballona Creek. The Project's goal is to capture and collect trash coming down the creek to prevent it from entering and polluting the ocean and thus, protect the environment.

The floating Interceptor™ would be a single vessel moored in Ballona Creek through attachment to six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor™ mechanical conveyor belt, which automatically feeds the trash into a floating receptacle, thus preventing the refuse from reaching the Pacific Ocean. The Interceptor™ is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15). Figure 1 shows the Project Location.



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2.0 Existing Site Conditions

## 2.0 EXISTING SITE CONDITIONS

### 2.1 TOPOGRAPHY AND SURROUNDING LAND USES

Ballona Creek is an approximately nine-mile-long waterway that is located within the coastal plain of the Los Angeles Basin and flows through the City of Los Angeles, Culver City, and unincorporated Los Angeles County (County) and empties into the Santa Monica Bay between Playa del Rey and Marina del Rey. The Survey Area (SA), as depicted in Figure 2 in Appendix A, is located at the end of Ballona Creek, where it feeds into the Santa Monica Bay south of the Marina del Rey Harbor and Venice Beach, and north of the community of Playa del Rey and Dockweiler Beach. A photographic log for the survey is included in Appendix B and depicts representative environmental conditions within the BSA and surrounding areas.

Ballona Creek was constructed between 1935 and 1939 by the USACE as a flood risk management channel. It flows through the BWER, which is located on the coastal plain of the Los Angeles Basin at an elevation of approximately 5 to 28 feet (USACE, 1999). This basin is dominated by northwest-trending strike-slip faults including the Whittier, Newport-Inglewood, and Palos Verdes Faults. Specifically, within the Los Angeles Basin, the BWER is in a small valley referred to as the Ballona Gap. The Ballona Gap was formed by erosion, repeated sea level fluctuations, and river channel migration. The Los Angeles River flowed through this area, prior to 1825, depositing fluvial sediments (Bilodeau et al. 2007). After a major flood event in 1825, the Los Angeles River shifted southward.

The Ballona Creek watershed covers approximately 130 square miles within the Los Angeles Basin (LADPW, 2019). With headwaters in the Santa Monica Mountains, the principal tributaries to the Ballona Creek are the Benedict Canyon Channel, Sepulveda Channel (also known as Sawtelle-Westwood Channel), Centinela Creek Channel, and an immense system of underground storm drains (ESA, 2017). The Ballona Creek Watershed provides flood risk management for approximately 1.5 million residents in all or parts of the Cities of Los Angeles, Beverly Hills, Culver City, Santa Monica, Inglewood, West Hollywood, and the unincorporated County communities of Ladera Heights and View Park.<sup>1</sup>

#### 2.1.1 Ballona Creek Channel

Due to large scale flooding in the Los Angeles River Basin, levees and embankments were installed along both sides of Ballona Creek channel. Upstream of the confluence with Centinela Creek, Ballona Creek is a trapezoidal concrete channel confined by levees on both sides. Downstream of the confluence with Centinela Creek, the trapezoidal channel has a sediment, or “soft,” bottom with concrete side slopes until it reaches near Culver Boulevard. Downstream of Culver Boulevard, the trapezoidal channel continues to have a sediment bottom with embankments that are made of riprap with a grouted cap.

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<sup>1</sup> Los Angeles County Public Works, Ballona Creek Watershed. Available at: <http://ladpw.org/wmd/watershed/bc/>. Accessed August 2019.



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Ballona Creek is connected to the BWER through two self-regulated tide gates, which limit the high tide levels in the wetland area (that is, they “mute” the tides).<sup>2</sup>

The mouth of Ballona Creek empties into the Santa Monica Bay south of Marina del Rey and Venice Beach, and north of the community of Playa del Rey and Dockweiler Beach. The channel mouth is approximately 295 feet wide. The elevation of the channel’s bottom at the Project site ranges from -2.2 to +7.8 feet with respect to mean sea level.

### 2.1.2 Ballona Creek North and South Jetties (a USACE-constructed federal civil works project)

The Marina del Rey Harbor main channel and Ballona Creek are connected by the existing jetty to the north of Ballona Creek (the Ballona Creek North Jetty). The portion of Ballona Creek North Jetty that will be used for this Project is considered a navigation structure and not a levee. The USACE Los Angeles District is the local sponsor for the segment of the levee system being used in this Project. The portion of Ballona Creek South Jetty that will be used for this Project is considered a jetty near the outlet of Ballona Creek and a channel around Pacific Avenue Bridge. The channel section being used for this Project is operated and maintained by USACE. As the Project has the potential to modify, alter, and/or occupy portions of an existing USACE-constructed federal civil works project (i.e., the jetties), an authorization application under Section 408 of the Rivers and Harbors Act is being requested. In order for USACE to approve any proposed alteration requests, the proposed alterations must meet USACE standards and must not be injurious to the public interest or affect USACE’s ability to meet its authorized purpose.

## 2.2 VEGETATION AND LAND COVERS

As defined in the *Manual of California Vegetation*, 2nd Edition (MCVII), a vegetation alliance is, “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition, and reflects the effects of local climate, soil, water, disturbance, and other environmental factors” (Sawyer et al. 2009). Generally, Stantec’s mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, no native habitat occurs within the SA. Therefore, the vegetation community land cover types discussed below are descriptive in nature and are not specifically referenced in the MCVII. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

Recent technical studies for biological resources, specifically habitat and vegetation mapping, have been conducted in support of the Ballona Wetlands Restoration Project currently proposed by the CDFW. The extent of these surveys overlaps with portions of the SA. The Draft Environmental Impact Report (EIR)

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<sup>2</sup> U.S. Environmental Protection Agency Region IX, Ballona Creek Wetlands Total Maximum Daily Loads for Sediment and Invasive Exotic Vegetation. Available at: [https://www.waterboards.ca.gov/losangeles/water\\_issues/programs/tmdl/Established/Ballona/BallonaCreekWetlandsTMDL-final.pdf](https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Ballona/BallonaCreekWetlandsTMDL-final.pdf). Accessed August 2019.



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## 2.0 Existing Site Conditions

prepared for the Ballona Wetlands Restoration Project (ESA 2017) was used to define the vegetation classifications that occur within the SA that are not defined in MCVII. These classifications are described below and depicted in Figure 2 (Appendix A).

Habitats observed within the SA during the field survey primarily included common plant species and vegetation communities found in the central coast-ranges and surrounding areas. Habitat conditions within the SA were noted to be of generally good quality, with well-established communities primarily made up of native shrub and tree species. A moderate amount of non-native shrub and tree species were interspersed within the SA. Within the SA, Stantec biologists mapped one plant community defined by Sawyer et al. (2009), one additional plant community mapped by the Draft EIR for Ballona Wetlands Restoration Project (ESA 2017), and three land cover types. These are depicted in Figure 2 included in Appendix A. Small, localized areas occupied by other plant communities were also observed within the SA; however, the areas were less than the minimum mapping unit dictated by the size of the SA and thus, were not mapped.

### 2.2.1 Vegetation Communities

#### 2.2.1.1 Invasive Monoculture

Approximately 0.73 acre of this community occurs within the SA, in the upland area of Ballona Creek. In the Draft EIR for the Ballona Wetlands Restoration Project, Invasive Monoculture is described as follows:

*...monocultures or very low-diversity assemblages of invasive herbs and shrubs including black mustard (Brassica nigra), crown daisy (Glebionis coronaria), wild radish (Raphanus sativus) ... pampas grass (Cortaderia spp.), carnation spurge (Euphorbia terracina), and castor bean (Ricinus communis). In addition, small, fragmented groups of non-native trees, primarily thorn tree and lollypop tree (Myoporum laetum), are included in this habitat type. Invasive monocultures are common across the BWER within many upland habitat types. However, they are most often located in areas with introduced fill (e.g., berms or upland fill areas) (ESA 2017).*

Within the SA, plant species observed within this community included black mustard, crown daisy, radish, and pampas grass. Small Philippine acacia (*Acacia confusa*), tree tobacco (*Nicotiana glauca*), sweet alyssum (*Lobularia maritima*), shortpod mustard (*Hirschfeldia incana*), common sowthistle (*Sonchus oleraceus*), barley (*Hordeum* sp.), and Bermuda buttercup (*Oxalis pes-caprae*) were present and observed in this plant community.

#### 2.2.1.2 Dune Mat Alliance (*Abronia latifolia* - *Ambrosia chamissonis* Herbaceous Alliance)

Approximately 0.41 acre of this vegetation community occurs along the southern boundary of the SA. It primarily occurs along the margins of Dockweiler State Beach, the Ballona Creek South Jetty south of Ballona Creek within the outer rocky outcrops of Ballona Creek, and the sandy beach surfaces immediately south of the creek. Within the SA, this alliance is represented by silver burr ragweed (*Ambrosia chamissonis*) and European searocket (*Cakile maritima*) as the dominant species. Lesser sea-spurry (*Spergularia marina*), common stork's-bill (*Erodium cicutarium*), prostrate knotweed (*Polygonum*



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## 2.0 Existing Site Conditions

*aviculare*), and ripgut brome (*Bromus diandrus*) are interspersed throughout this community. This alliance is generally found to occur in sand dunes of coastal bars, river mouths, and spits along the immediate coastline with coarse to fine-textured sands.

### 2.2.2 Land Cover Types

#### 2.2.2.1 Open Water

Approximately 13.95 acres of open water habitat occur in the Ballona Creek channel and Marina del Rey Harbor Main Channel within the SA. Ballona Creek is a flood control channel, which within the SA has riprap and grouted cap embankments and a soft sediment bottom. The Main Channel supports the passage of small and large watercrafts through the harbor. The open water habitat is generally unvegetated, although a narrow fringe of herbaceous vegetation may occasionally be seen along the banks of Ballona Creek during low tide.

#### 2.2.2.2 Sandy Beach

Approximately 1.03 acres of this land cover type occurs within the SA and includes a small portion of northern Dockweiler State Beach. This area is heavily disturbed and used as a recreational space, including a paved bicycle path that intersects the beach. The area is dominated by fine sands and is generally unvegetated due to the level of disturbance.

#### 2.2.2.3 Disturbed and Developed

This land cover type was used to map approximately 6.95 acres of the SA that are developed, including multi-unit residential buildings, paved and unpaved roadways and paths, the Ballona Creek North and South Jetties, landscaped areas, and developed recreational spaces. In general, these areas are unvegetated or contain ornamental vegetation. These areas are generally maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil. These include non-native grasses and forbs such as soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and Bermuda grass (*Cynodon dactylon*).

## 2.3 CLIMATE

The weather of coastal Los Angeles County is characteristic of the Mediterranean climate typical of southern California. It is characterized by warm, dry summers and wetter, cooler winter months with relatively low amounts of rainfall. According to data collected by the Culver City, California, weather station, the nearest active publicly accessible weather station to the SA, the annual high temperature in the region averages 72.3 degrees Fahrenheit (°F) and the annual low temperature average is 53.3°F. The region typically receives an average annual rainfall of 13.15 inches, with most of the rainfall occurring November through April. This data was collected during the period of record of 1935 to 2016 (WRCC 2020).



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2.0 Existing Site Conditions

## 2.4 HYDROLOGY AND GEOMORPHOLOGY

The Ballona Creek watershed is in Los Angeles County and includes three reaches as defined by the 1994 *Water Quality Control Plan for the Los Angeles Region* (LARWQCB 1994):

1. Reach 1 or Ballona Creek: Cochran Avenue to National Boulevard.
2. Reach 2 or Ballona Creek to Estuary: National Boulevard to Centinela Avenue.
3. Ballona Creek Estuary: Centinela Avenue to the Pacific Ocean.

Reaches 1 and 2 are upstream of the SA; the SA falls within the Ballona Creek Estuary.

The Ballona Creek watershed covers approximately 130 square miles within the Los Angeles Basin. With headwaters in the Santa Monica Mountains, the principal tributaries to the Ballona Creek are the Benedict Channel, Sepulveda Channel, and Centinela Channel and an immense system of underground storm drains (ESA 2017). Ballona Creek is an approximately nine-mile- long waterway that is located within the coastal plain of the Los Angeles Basin and flows through the City of Los Angeles, Culver City, and unincorporated Los Angeles County (County) and empties into the Santa Monica Bay between Playa del Rey and Marina del Rey. Ballona Creek flows through the BWER within the coastal plain of the Los Angeles Basin at an elevation of about 5 to 28 feet (USACE 1999).

The watershed upstream of the SA is approximately 20 percent undeveloped foothill and canyon area and 80 percent highly urbanized coastal plain, including the densely developed communities of Beverly Hills, Culver City, Hollywood, and a portion of the City of Los Angeles (USACE 2010). Following damaging flooding events in the 1930s, the Ballona Creek and its tributaries were channelized, and concrete levees were constructed (ESA 2017). The flood risk management channel provides support for approximately 1.5 million residents of the listed cities.

## 2.5 GEOLOGY

The SA is located within the western portion of the Peninsular Ranges Geomorphic Province (California Geological Survey 2002). This province consists of a series of northwest-trending ranges and valleys, almost parallel to faults branching from the San Andreas Fault. Although located along the coast, the underlying geologic materials are more like those found in the Sierra Nevada Mountain range, with granitic rock intruding the older metamorphic rocks. The Peninsular Ranges extend from the southern slopes of the Santa Monica and San Gabriel Mountains of the Transverse Ranges Geomorphic Province along the north and east, south into Baja California, and bounded on the southeast by the Colorado Desert (ESA 2017).

The Los Angeles Basin is in the northern portion of the province and extends south from the Santa Monica Mountains, west from the Elysian-Repetto Hills, and north from the Palos Verdes Hills to the Pacific Ocean (Bilodeau et al. 2007). Major northwest-trending strike-slip faults, such as the Whittier, Newport-Inglewood, and Palos Verdes Faults, dominate the basin. The thickness of the dominantly Miocene and Pliocene (23 to 2.5 million years before present) sedimentary fill in the central trough of the Los Angeles Basin, a structural low between the Whittier and Newport–Inglewood Faults, is estimated to be about 30,000 feet (ESA 2017).



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## 2.0 Existing Site Conditions

## 2.6 SOILS

Prior to conducting the delineation, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the SA and included determining where hydric soils have historically occurred (Appendix A, Figure 3). Table 1 identifies the soils historically known to occur within the SA, and characteristics of these soils are summarized in Appendix C.

**Table 1: Historic Soil Units Occurring within the Survey Area\***

Map Unit Symbol	Map Unit Name	Description	Acres within the Survey Area
1100	Urban land, 0 to 2 percent slopes, dredged fill substratum	Associated with islands and spits at elevations between 0 and 20 feet; very high runoff; 0 inches to manufactured layer.	5.66
1150	Abaft-Beaches complex, 0 to 5 percent slopes	An excessively drained soil associated with dunes and beaches at elevations between 0 and 20 feet; parent material consists of alluvium and/or eolian sands; negligible runoff; sand (0 to 79 inches).	4.31
W	Water	water	10.65

\* Western portions of SA, within the Pacific Ocean, are not mapped as a soil type by the NRCS. Therefore, the total acres reported in this table do not represent the total size of the SA due to the lack of available historic soils data. .

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3.0 Regulatory Background

## 3.0 REGULATORY BACKGROUND

The USACE generally regulates activities in Ballona Creek pursuant to Section 404 of the federal Clean Water Act (CWA) and Sections 10 and 14, codified at 33 U.S.C. § 408 (often referred to as “Section 408”), of the Rivers and Harbors Act. The CDFW regulates activities under California Fish and Game Code Sections 1600-1607. The RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

As the Project occurs within the Coastal Zone, a Coastal Development Permit is being sought from CCC, which would require that the Project adhere to the policies of the California Coastal Act.

Refer to Appendix E for additional details on regulatory authorities and applicability to the Project.



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3.0 Regulatory Background

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4.0 Waters and Wetlands Delineation

## 4.0 WATERS AND WETLANDS DELINEATION

### 4.1 DELINEATION METHODOLOGY

This section describes the methods employed by Stantec during the surveys conducted on February 25, 2020, and March 2, 2020, to determine the extent of potentially jurisdictional wetlands and waters that occur within the SA. Prior to conducting the field assessment, Stantec reviewed current and historic aerial photographs, detailed topographic maps, and soil maps of the SA (USDA 2020), the National Wetlands Inventory (USFWS 2020), and local and state hydric soil lists (NRCS 2020a) to evaluate the potential jurisdictional features that may occur within the SA.

During the field assessment, hydrologic features were mapped over recent aerial photograph base maps using the ESRI Collector for ArcGIS app on an Apple iPad coupled with a Bad Elf GNSS Surveyor sub-meter external global positioning system unit (refer to Appendix A, Figure 4). Mapping was further refined in the office using ArcGIS (version 10.6) using aerial photograph base maps with an accuracy of 1 foot, and the total jurisdictional area for each regulatory jurisdiction was calculated.

#### 4.1.1 Federal Waters (Section 404)

On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) published the Navigable Waters Protection Rule in the Federal Register to finalize a revised definition of “waters of the United States” under the Clean Water Act. The rule became effective on June 22, 2020. The 2020 ruling established four categories of jurisdictional waters (e.g., territorial seas and traditionally navigable waters; tributaries; lakes, ponds and impoundments; and adjacent wetlands), and specified exclusions for many water features that traditionally have not been regulated.

Where present, jurisdictional wetlands are delineated using a routine determination in accordance with the methods outlined in the *USACE Wetland Delineation Manual* and the *Arid West Supplement* and based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils (Environmental Laboratory 1987; Environmental Laboratory 2011). See Tables 1 and 2 in Appendix D (Potential Geomorphic and Vegetative Indicators of OHWM for the Arid West) for a list of key physical features used to determine the OHWM identified by the *Arid West Manual*.

#### 4.1.2 Federal Navigable Waters (Section 10)

Although Section 10 of the Rivers and Harbors Act is specific to structures within navigable waters, as defined in the Rivers and Harbors Act regulations, and not the placement of dredge and fill material, navigable waters are still delineated using the same methodology; refer to Section 4.1.1 above.

#### 4.1.3 CDFW Jurisdictional Waters

CDFW jurisdiction is generally, under CDFW's interpretation of the Fish & Game Code, delineated to the top of the banks of the channel and to the edge of contiguous riparian canopy and riparian habitat.



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Therefore, the total acreage of CDFW jurisdictional waters is often greater than the combined acreage of federal waters and wetlands. The top of the bank is determined based on changes in slope (“hinge points”) and the uppermost point is used in order to conservatively estimate the top of the bank.

##### 4.1.4 Waters of the State

Waters of the state are defined more broadly than “waters of the United States” and generally refer to any surface water or groundwater, including saline waters, within the boundaries of the state. Waters of the state are broadly construed to include all waters within the state’s boundaries, whether private or public, including waters in both natural and artificial channels. More specifically they include the following:

- All “waters of the United States”
- All surface waters that are not “waters of the United States (e.g., non-jurisdictional wetlands)
- Groundwater
- Territorial seas

Within the SA, the extent of waters of the state mirrors that of CDFW Jurisdictional Waters and includes all portions of open water within Ballona Creek to the top of the channel bank. In addition, portions of the waters of the state within the SA overlap with mapped non-wetland Waters of the U.S.

##### 4.1.5 California Coastal Commission Wetlands

CCC employs the USACE methodology to determine the presence of the three wetland parameters described above. However, whereas the USACE uses a three-parameter definition of wetlands, CCC regulations (California Code of Regulations [CCR] Title 14) establish a “one parameter definition” that only requires evidence of a single parameter to establish wetland conditions:

*Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats.*

Therefore, if an area exhibited either a dominance of hydrophytic vegetation, wetland hydrology, or hydric soils, it was characterized as a CCC wetland.

##### 4.1.6 Federal Wetlands

###### 4.1.6.1 Wetland Vegetation

Vegetation percent cover is visually estimated for plant species in each of the four strata (tree, sapling/shrub, herb, and woody vine), and species in each stratum are ranked based on canopy dominance (USACE 2016). Species with a total percent cover of at least 50 percent and species with 20



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percent coverage within each stratum are recorded on the Field Data Sheets (50/20 Rule). Wetland indicator status is assigned to each dominant species using the USACE Arid West Regional Wetland Plant List (2016), the California subregion of the National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (USFWS 1997); and Wetland Plants of Specialized Habitats in the Arid West (USACE 2007). If greater than 50 percent of the dominant species from all strata are Obligate (OBL), Facultative-Wetland (FACW), or Facultative (FAC) species, the criteria for dominant hydrophytic wetland vegetation is considered met (Appendix D, Table 3, Summary of Wetland Indicator Status). Facultative Upland (FACU) species usually occur in non-wetlands, but are occasionally found in wetlands. Table 2 provides a list of plant species observed during the February 25, 2020 and March 2, 2020 surveys. Less than 50 percent of the observed plant species in the SA are OBL, FACW, or FAC species. The lack of hydrophytic vegetation prevents the SA from meeting the three-parameter threshold to be mapped as a federally jurisdictional wetland.

**Table 2: Plant Species Observed in the Survey Area**

Scientific Name	Common Name	Wetland Indicator Status
<i>Acacia confusa</i> *	small Philippine acacia	--
<i>Achillea millefolium</i>	common yarrow	FACU
<i>Aeonium arboreum</i> *	tree aeonium	--
<i>Agapanthus praecox</i> *	lily of the Nile	--
<i>Agave attenuata</i> *	lion's tail	--
<i>Ageratina altissima</i> *	white snakeroot	FACU
<i>Ambrosia chamissonis</i>	silver burr ragweed	--
<i>Artemisia californica</i>	California sagebrush	--
<i>Atriplex lentiformis</i>	big saltbush	FAC
<i>Baccharis pilularis</i>	coyote brush	--
<i>Bellis perennis</i> *	common daisy	--
<i>Brassica nigra</i> *	black mustard	--
<i>Bromus diandrus</i> *	ripgut brome	--
<i>Bromus hordeaceus</i> *	soft brome	FACU
<i>Cakile maritima</i> *	European searocket	FAC
<i>Camissoniopsis cheiranthifolia</i>	beach suncup	--
<i>Carissa macrocarpa</i> *	natal plum	--
<i>Carpobrotus chilensis</i> *	Chilean sea fig	FACU
<i>Carpobrotus edulis</i> *	iceplant	--
<i>Chenopodium murale</i> *	nettle-leaved goosefoot	--
<i>Cleomella arborea</i>	bladderpod	--
<i>Cortaderia selloana</i> *	pampas grass	FACU



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## 4.0 Waters and Wetlands Delineation

Scientific Name	Common Name	Wetland Indicator Status
<i>Croton californicus</i>	California croton	--
<i>Curio repens</i> *	blue chalksticks	--
<i>Cynodon dactylon</i> *	Bermuda grass	FACU
<i>Encelia californica</i>	California brittlebush	--
<i>Erodium cicutarium</i> *	common stork's-bill	--
<i>Ficus microcarpa</i> *	curtain fig	--
<i>Glebionis coronaria</i> *	crown daisy	--
<i>Heterotheca grandiflora</i>	telegraphweed	--
<i>Hirschfeldia incana</i> *	shortpod mustard	FACU
<i>Hordeum</i> sp.	barley	--
<i>Isocoma menziesii</i>	Menzie's goldenbush	FAC
<i>Juniperus horizontalis</i> *	creeping juniper	FACU
<i>Lantana camara</i> *	common lantana	FACU
<i>Lampranthus spectabilis</i> *	trailing iceplant	--
<i>Lobularia maritima</i>	sweet alyssum	--
<i>Lotus scoparius</i>	common deerweed	--
<i>Malva parviflora</i> *	cheeseweed	--
<i>Melilotus indicus</i> *	annual yellow sweetclover	FACU
<i>Nicotiana glauca</i> *	tree tobacco	FAC
<i>Oxalis stricta</i>	common yellow oxalis	FACU
<i>Oxalis pes-caprae</i> *	Bermuda buttercup	--
<i>Phoenix canariensis</i> *	Canary Island date palm	--
<i>Polygonum aviculare</i> *	prostrate knotweed	FAC
<i>Prunus persica</i> *	peach	--
<i>Raphanus sativus</i> *	cultivated radish	FACU
<i>Salicornia pacifica</i> *	Pacific pickleweed	--
<i>Sonchus oleraceus</i> *	common sow thistle	FACU
<i>Spergularia marina</i>	lesser sea spurry	OBL
<i>Strelitzia reginae</i> *	bird of paradise	--
<i>Taraxcum</i> sp.	dandelion	--
<i>Washingtonia robusta</i>	Mexican fan palm	--

\* Non-native Species



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#### 4.0 Waters and Wetlands Delineation

##### 4.1.6.2 Wetland Hydrology

The presence of wetland hydrology is assessed by evaluating the presence of primary and secondary hydrology indicators (Appendix D, Tables 4 and 5). Wetland hydrology indicators are tiered into two categories: primary and secondary indicators. The presence of one primary indicator from either group is indicative of sufficient wetland hydrology, while two or more secondary indicators must be present to indicate sufficient wetland hydrology. Indicators are intended to be one-time observations of site conditions, representing evidence of wetland hydrology when hydrophytic vegetation and hydric soils are present (Environmental Laboratory 2011). OHWM is estimated using the boundaries of in-stream channels or the change in slope at the toe of the bank, as appropriate. Surface water, as identified as a primary indicator for wetland hydrology, was present within Ballona Creek during the February 25, 2020, and March 2, 2020, surveys.

##### 4.1.6.3 Wetland Soils

Soils data from NRCS are referenced to determine if hydric soils have been previously documented or historically occurred in or near the SA (Appendix A, Figure 3). Based on this review, no hydric soils types occur within the SA. Tables 6 and 7 in Appendix D include a complete list of hydric soils indicators.

The SA encompasses a portion of Ballona Creek, which is channelized with concrete and riprap banks and has a soft sediment bottom. The survey was conducted at low tide, and the creek bed was inundated with a tidally influenced flow. The graded and paved paths along the SA were solid and impenetrable. As a result of these conditions, no soil test pits were dug to examine soil color or texture during the survey.

## 4.2 RESULTS

The National Wetlands Inventory has mapped Ballona Creek within the SA as an R1UBVx feature (Riverine, Tidal, Unconsolidated Bottom, Permanently Flooded-Tidal, Excavated) (data is from 2006) (USFWS 2020). Based on the observations conducted in the field, five types of jurisdictional waters occur within the SA associated with Ballona Creek: USACE and RWQCB-regulated non-wetland waters of the U.S., USACE Section 10-regulated navigable waters, waters of the state, CCC jurisdictional wetlands, and CDFW jurisdictional waters (Figure 4 in Appendix A). Field data sheets are provided in Appendix F. Due to existing inundation even at low tide and the presence of graded and paved banks, Stantec biologists were unable to perform soil test pits. Based on Stantec's professional opinion, the SA contains 14.24 acres of non-wetland waters of the U.S. (Section 404), CCC wetlands, and Section 10 waters; and 15.93 acres of CDFW jurisdictional waters and waters of the state.

As shown in Figure 4, the moorings would be constructed outside the limits of waters of the U.S., CCC wetlands, Section 10 waters, waters of the state, and CDFW jurisdictional waters. While the mooring chains, trash booms, and Interceptor™ would be located within the aforementioned jurisdictional limits, the Project does not involve the discharge of dredge or fill material or any other material to surrounding waters, diversion of water, or alteration of the stream bed or bank. In addition, the proposed Project would serve a beneficial purpose with respect to removing existing trash and debris from entering Santa Monica Bay, and through extension, the Pacific Ocean.



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#### 4.0 Waters and Wetlands Delineation

Jurisdictional areas are summarized in Table 3 and described in detail below.

**Table 3: Jurisdictional Features in the Survey Area\***

Waters of the U.S (Section 404)		CDFW Jurisdictional Waters		Waters of the State		CCC Wetlands		USACE Section 10 Waters	
SA	Permanent Impact Area	SA	Permanent Impact Area	SA	Permanent Impact Area	SA	Permanent Impact Area	SA	Permanent Impact Area
14.24	0.023	15.93	0.023	15.93	0.023	14.24	0.023	14.24	0.023

\* All reported impacts are in acres

#### 4.2.1 Federal Wetlands

Based on Stantec's professional opinion, following an assessment of hydrology and vegetation, no portion of Ballona Creek within the SA would satisfy the three-criteria definition required to be considered federal wetlands (Environmental Laboratory 1987, 2011; USACE 2008a, b). While primary indicators of wetland hydrology (e.g., surface water and high water table) are present within the SA, the lack of hydric soils and hydrophytic vegetation prevent the SA from meeting the three parameter requirement to be mapped as a jurisdictional wetland.

#### 4.2.2 Federal Non-Wetlands Waters

Ballona Creek is regularly inundated and subject to tidal influence throughout the SA, meeting the classification of "non-wetland waters" under USACE Section 404 jurisdiction. Furthermore, Ballona Creek is a channelized creek that is directly connected to the Pacific Ocean. Approximately 14.24 acres of federal non-wetland waters occur within the SA. The mooring chains, trash booms, and Interceptor™ would be located within approximately 0.023 acre of waters of the U.S. However, the Project does not involve the discharge of dredge or fill material that would be regulated under Section 404 of the CWA. Construction and operation of the Project is expected to require authorization by USACE under Sections 10 and 14 (33 U.S.C. 408) of the U.S. Rivers and Harbors Act.

The proposed Project does not involve discharge of fill or dredge materials into Waters of the U.S. (no Section 404 permit required); however, the RWQCB has requested submission of a Section 401 permit application. Upon review of the application, the RWQCB will determine whether to issue a Section 401 Water Quality Certification, a Waste Discharge Requirement (WDR) permit, or will determine that no permit/ authorization is required.

#### 4.2.3 Section 10 Waters

Ballona Creek is a known navigable water of the U.S. and is therefore subject to Section 10 of the Rivers and Harbors Act. Approximately 14.24 acres of Section 10 waters occur within the SA. The mooring chains, trash booms, and Interceptor™ would be located within approximately 0.023 acre of Section 10 Waters.



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4.0 Waters and Wetlands Delineation

**4.2.4 California Department of Fish and Wildlife Jurisdictional Waters**

There are approximately 15.93 acres of waters of the state and CDFW jurisdictional waters within SA. The mooring chains, trash booms, and Interceptor™ would be located within approximately 0.023 acre of waters of the state and CDFW jurisdictional waters. However, the Project does not involve substantially diverting or obstructing the natural flow of Ballona Creek; substantially changing or using any material from the bed, channel, or bank of Ballona Creek; or depositing or disposing of debris, waste, or other material into Ballona Creek. Therefore, notification to CDFW pursuant to California Fish & Game Code section 1602 is not required.

**4.2.5 Waters of the State**

Approximately 15.93 acres of waters of the state occur within the SA. The limits of waters of the state within the SA include all non-wetland waters of the U.S. and extend to the top of the channel banks. Within the SA the limits of waters of the state mirror those of CDFW jurisdictional waters as described above. In total, the Project would impact approximately 0.023 acres of waters of the state; a portion of which overlaps with non-wetlands waters of the U.S.

**4.2.6 California Coastal Commission Wetlands**

The presence of primary and secondary hydrologic indicators such as Surface Water – A1, Saturation - A3, and Inundation Visible on Aerial Imagery – B7 within Ballona Creek qualifies this feature as a CCC wetland based on the CCC's one parameter definition (refer to Appendix D for additional information on these indicators). Based on Stantec's professional opinion, the proposed Project would impact the approximately 0.023 acres of CCC jurisdictional wetland within the SA.



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4.0 Waters and Wetlands Delineation

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5.0 Summary and Conclusions

## 5.0 SUMMARY AND CONCLUSIONS

The SA supports USACE and RWQCB-regulated non-wetland waters of the U.S., USACE RHA Section 10-regulated navigable waters, waters of the state, CDFW jurisdictional waters, and CCC wetlands, most of which are contained within the confines of Ballona Creek. Surface water was present within Ballona Creek during the survey events. Based on Stantec's professional opinion, following an assessment of hydrology, soil characteristics, vegetation, and the limits of the OHWM, there are approximately 14.24 acres of non-wetland WOTS./CCC wetlands/RHA Section 10 waters and 15.93 acres of WOTS and CDFW jurisdictional waters within the SA. No portion of the SA meets all the three criteria required for federal wetlands (i.e., dominance of hydrophytic vegetation, evidence of wetland hydrology, and hydric soils).

The mooring chains, trash booms, and Interceptor™ would be located within approximately 0.023 acre of WOTUS, CCC wetlands, RHA Section 10 waters, WOTS, and CDFW jurisdictional waters. However, the Project does not involve the discharge of dredge or fill material; substantially diverting or obstructing the natural flow of Ballona Creek; substantially changing or using any material from the bed, channel, or bank of Ballona Creek; or depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into Ballona Creek; therefore, impacts to non-wetland waters of the U.S. and CDFW jurisdictional waters are not expected to occur.

The conclusions presented above represent Stantec's professional opinion based on our knowledge and experience with the applicable regulatory agencies, including their technical guidance documents and manuals. However, USACE, CDFW, RWQCB, and CCC have final authority in determining the status and presence of jurisdictional wetlands and waters and the extent of their boundaries.



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5.0 Summary and Conclusions

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6.0 References

## 6.0 REFERENCES

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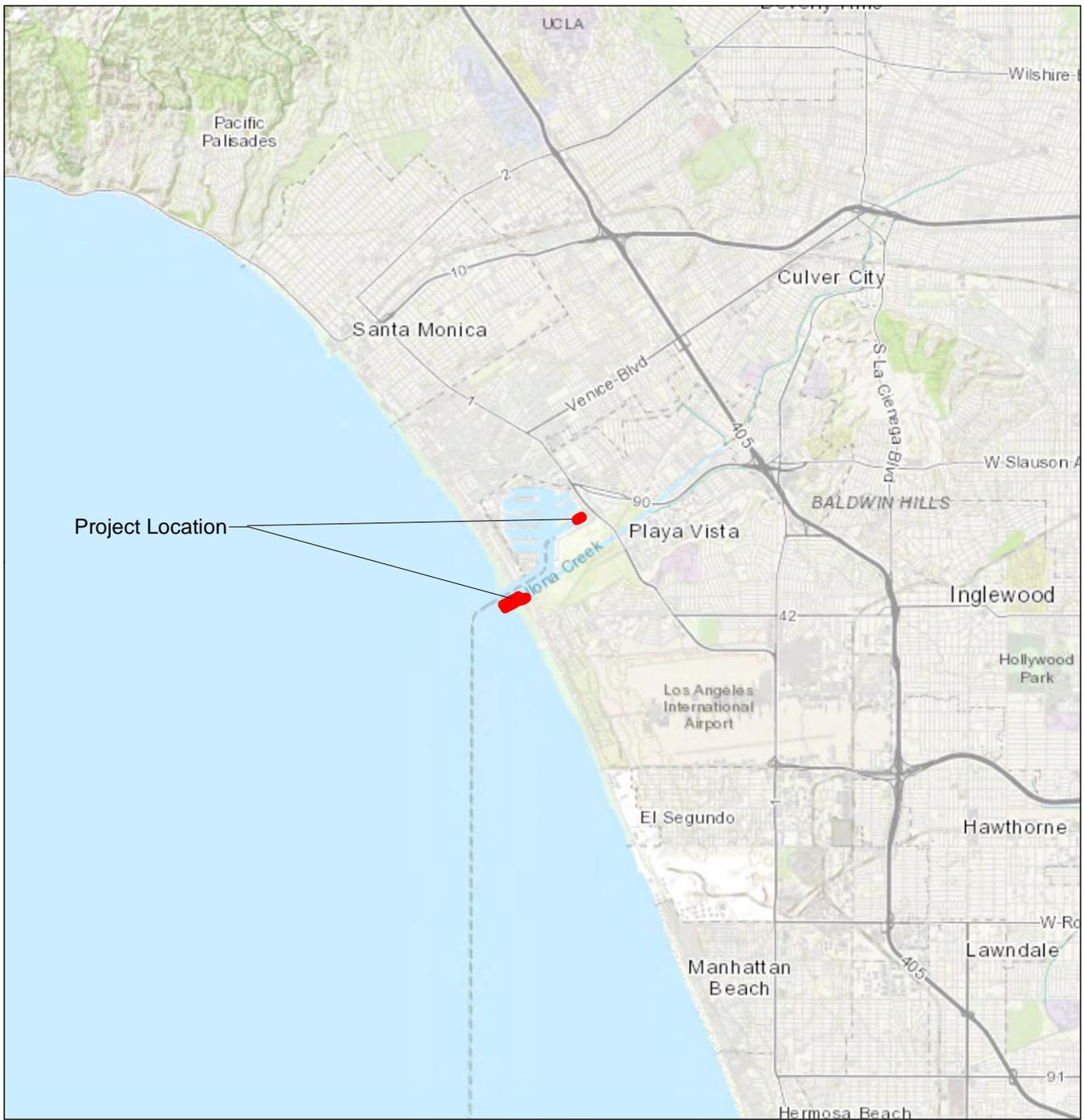
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## 6.0 References

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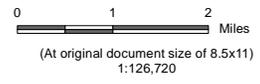
## Appendix A FIGURES



Project Location



 Project Location



*Project Location* Prepared by DL on 2020-09-25  
 Ballona Creek TR by JV on 2020-09-25  
 Los Angeles County, California IR by ST on 2020-09-25

*Client/Project* 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Preliminary Jurisdictional Delineation Report

*Figure No.*  
 1

*Title*  
**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2020.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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Jurisdictional Delineation Survey Area

Existing Bikeways

**Project Footprint**

Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]

Mooring Footprint [0.113 Acres]

Trash Boom

Mooring Line

Mooring Construction Staging Areas [0.37 Acres]

Interceptor Assembly Area [0.62 Acres]

**Vegetation Communities & Land Cover Types**

Developed (6.95 Acres)

Dune Mat Alliance (0.41 Acres)

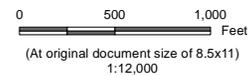
Ice Plant Mat Alliance (0.08 Acres)

Invasive Monoculture (0.73 Acres)

Open Water (13.95 Acres)

Pickleweed Mats Alliance (0.00035 Acres)

Sandy Beach (1.03 Acres)



Project Location Prepared by DL on 2020-09-25

Ballona, California TR by JV on 2020-09-25

Client/Project IR by ST on 2020-09-25

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Figure No. 2

Title  
**Vegetation Communities & Land Cover Types**

- Notes**
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
  2. Interceptor Centroid Coordinates: 33.962071, -118.455715
  3. Data Sources: Stantec 2020.
  4. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
  5. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.

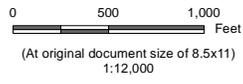
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- Jurisdictional Delineation Survey Area
- Existing Bikeways
- Project Footprint**
- Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]
- Mooring Footprint [0.113 Acres]
- Trash Boom
- Mooring Line
- Mooring Construction Staging Areas [0.37]
- Interceptor Assembly Area [0.62 Acres]

- Soils Map Unit Symbol**
- 1100; Urban land, 0 to 2 percent slopes, dredged fill substratum
  - 1150; Ahaft-Beaches complex, 0 to 5 percent slopes
  - W; Water



Project Location: Ballona Creek, Los Angeles County, California  
 Prepared by DL on 2020-09-25, TR by JV on 2020-09-25, IR by ST on 2020-09-25

Client/Project: Los Angeles County Public Works, Ballona Creek Trash Interceptor Pilot Project  
 Preliminary Jurisdictional Delineation Report  
 184031268

Figure No. 3

Title: Historical Soils

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020, NRCS 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 4. Only a desktop review of the Interceptor Assembly Area was performed for the 500ft Buffer.

V:\1858\active\184031268\05\_report\_delivd\wgs\_desig\gis\_figures\WXd\JD\Figures3\_JD\_SoilsMap\_02242020.mxd Revised: 2020-10-19 Bv.dalaw

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



Jurisdictional Delineation Survey Area

Existing Bikeways

**Project Footprint**

Interceptor/ Mooring Chains/ Trash Boom Footprint [0.023 Acres]

Mooring Footprint [0.113 Acres]

Trash Boom

Mooring Line

Mooring Construction Staging Areas [0.37 Acres]

Interceptor Assembly Area [0.62 Acres]

Waters of the State/ CDFW Jurisdictional Waters

USACE Federal Non-Wetland "Waters of U.S."/ CCC Jurisdictional Wetlands/ Section 10 Waters



*Project Location* Ballona Creek, Los Angeles County, California  
*Prepared by DL on* 2020-09-25  
*TR by JV on* 2020-09-25  
*IR by ST on* 2020-09-25

*Client/Project* 184031268

Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Preliminary Jurisdictional Delineation Report

*Figure No.*

4

*Title*

**Jurisdictional Delineation Map**

V:\184031\active\184031268\05\_report\_delivd\wgs\_desktop\figs\figures\MXD\SD\Figure4\_JD\_WatersMap\_02242020.mxd Revised: 2020-10-19 By: dalaw

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

## Appendix B PHOTOGRAPHIC LOG



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<p><b>Photograph ID:</b> 1</p> <p><b>Direction:</b> North-northeast</p> <p><b>Survey Date:</b> 2/25/2020, 3/2/2020</p> <p><b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the manually controlled tidal gate to Ballona Creek and Del Rey Lagoon without water. Tidal gate is operated by the City of Los Angeles Recreation and Parks.</p>	
--	--

<p><b>Photograph ID:</b> 2</p> <p><b>Direction:</b> North-northeast</p> <p><b>Survey Date:</b> 2/25/2020, 3/2/2020</p> <p><b>Comments:</b> From outside the eastern boundary of the SA facing north-northeast. Depicts the Del Rey Lagoon with water.</p>	
---	--



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 3	
<b>Direction:</b> West	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern bank of Ballona Creek along the graded path facing west towards the Pacific Avenue Bridge. The photo depicts the high level of bird activity along and within the creek.	

<b>Photograph ID:</b> 4	
<b>Direction:</b> Northeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Pacific Avenue Bridge looking upstream at Ballona Creek.	



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 5			
<b>Direction:</b> Southwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern end of the Pacific Avenue Bridge, looking downstream at Ballona Creek.			
<b>Photograph ID:</b> 6			
<b>Direction:</b> Northwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> Along the Ballona Creek North Jetty looking downstream of the Pacific Avenue Bridge. This photo depicts Ballona Creek on the left side of the image and Marina del Rey Harbor Main Channel as the main focal point on the right side of the image.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 7			
<b>Direction:</b> Northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> Along the northern boundary of the SA. This photo depicts the paved Ballona Creek Bike Path and Marina del Rey Harbor Main Channel on the left side of the photograph.			
<b>Photograph ID:</b> 8			
<b>Direction:</b> South-southeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the Ballona Creek North Jetty adjacent to the Pacific Avenue Bridge. This photo depicts the residential development and boat ramp south of Ballona Creek.			



Photographic Log

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

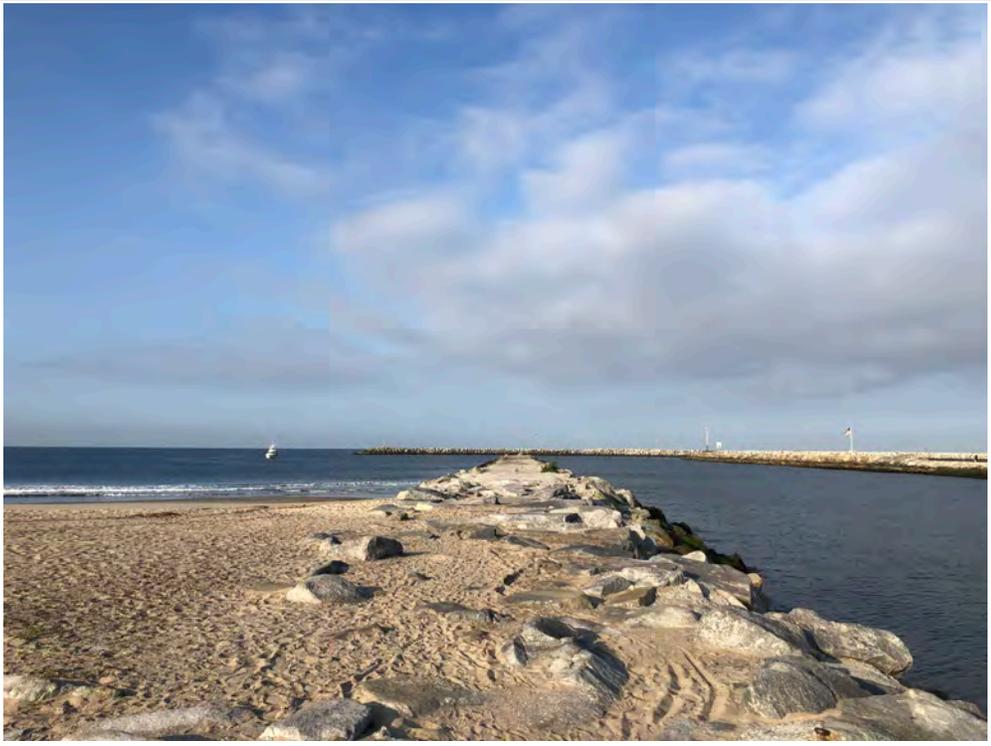
<b>Photograph ID:</b> 9	
<b>Direction:</b> South-southeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Ballona Creek North Jetty near the western boundary of the SA looking towards Dockweiler State Beach and the residential units along it.	

<b>Photograph ID:</b> 10	
<b>Direction:</b> East-northeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Ballona Creek South Jetty near the western boundary of the SA looking towards Pacific Avenue Bridge and Playa del Rey residential units along Dockweiler State Beach.	



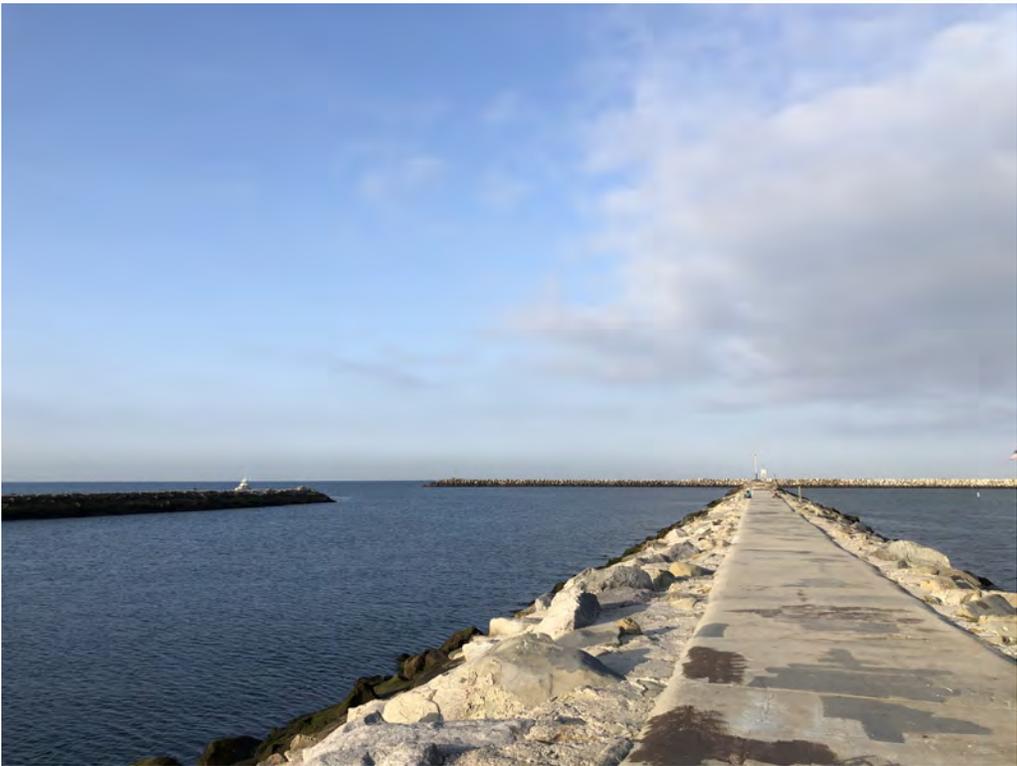
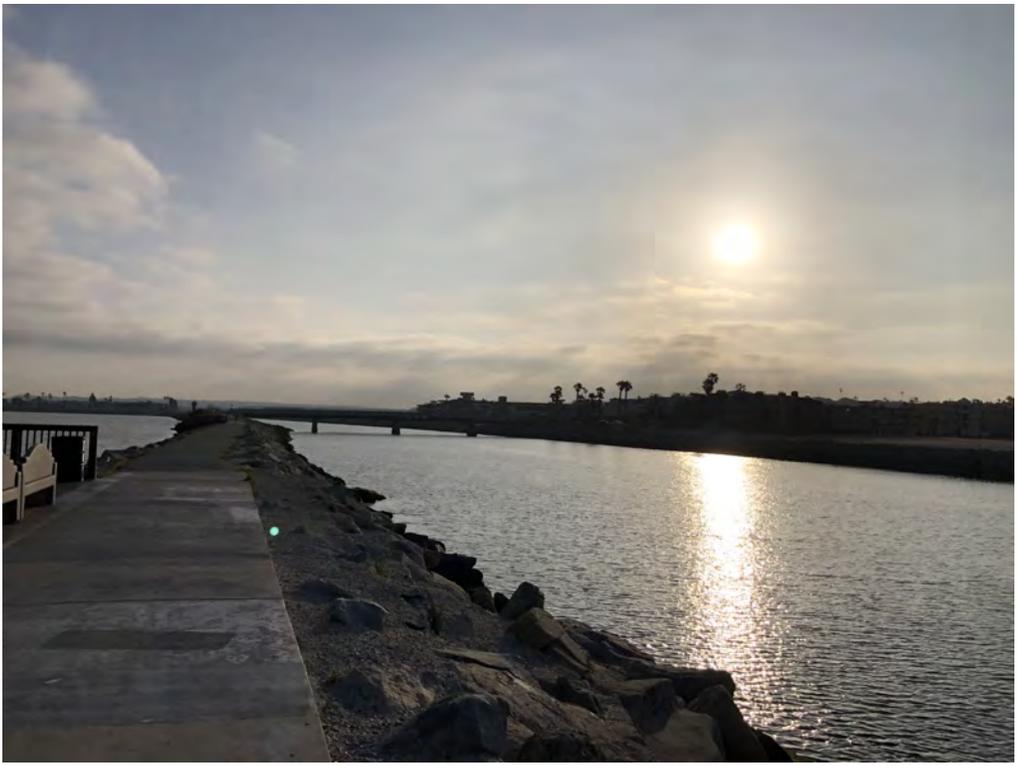
Photographic Log

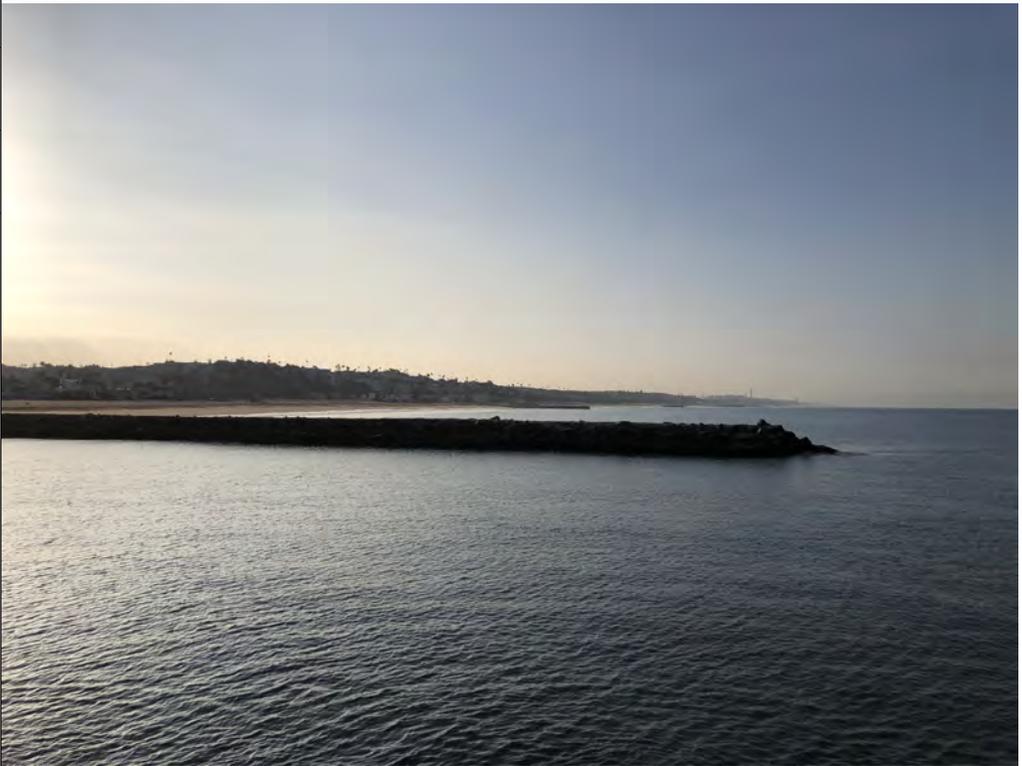
<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 11	
<b>Direction:</b> West-southwest	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the Ballona Creek mouth and South Jetty looking towards Santa Monica Bay.	

<b>Photograph ID:</b> 12	
<b>Direction:</b> Southeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the southern bank of Ballona Creek looking towards Dockweiler State Beach. The paved bike bath, residential units, and entrance to the lifeguard station are depicted.	

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 13			
<b>Direction:</b> West-southwest			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> South of Ballona Creek from the Ballona Creek South Jetty facing southwest towards Playa del Rey. The photo depicts the Dune Mat Alliance along the northern margin of Dockweiler State Beach.			
<b>Photograph ID:</b> 14			
<b>Direction:</b> East-northeast			
<b>Survey Date:</b> 2/25/2020, 3/2/2020			
<b>Comments:</b> From the southern bank of Ballona Creek looking towards a section of invasive monoculture south of Pacific Avenue Bridge.			

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 15			
<b>Direction:</b> west-southwest			
<b>Survey Date:</b> 3/29/2020			
<b>Comments:</b> Looking downstream from the Ballona Creek North Jetty (Ballona Creek Bike Path), separating Ballona Creek (on the left side) and the Marina Del Rey harbor entrance (on the right side).			
<b>Photograph ID:</b> 16			
<b>Direction:</b> east-northeast			
<b>Survey Date:</b> 3/29/2020			
<b>Comments:</b> From the Ballona Creek North Jetty looking upstream at the Pacific Avenue Bridge, with Ballona Creek on the right side of the image.			

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA
<b>Photograph ID:</b> 17			
<b>Direction:</b> southeast			
<b>Survey Date:</b> 3/29/2020			
<b>Comments:</b> From the Ballona Creek North Jetty and Marina Del Rey Harbor facing southeast at the Ballona Creek South Jetty with Dockweiler Beach in the background			
<b>Photograph ID:</b> 18			
<b>Direction:</b> west			
<b>Survey Date:</b> 3/29/2020			
<b>Comments:</b> Looking downstream along the Ballona Creek South Jetty with Ballona Creek on the right side of the image and the Pacific Ocean on the left side of the image.			

<b>Client:</b>	Los Angeles County Public Works	<b>Project:</b>	Ballona Creek Trash Interceptor Pilot Project
<b>Site Name:</b>	Ballona Creek	<b>Site Location:</b>	Los Angeles County, CA

<b>Photograph ID:</b> 19	
<b>Direction:</b> east-southeast	
<b>Survey Date:</b> 3/29/2020	
<b>Comments:</b> From the Ballona Creek South Jetty facing southeast towards Playa del Rey.	

<b>Photograph ID:</b> 20	
<b>Direction:</b> south-southeast	
<b>Survey Date:</b> 2/25/2020, 3/2/2020	
<b>Comments:</b> From the northernmost margin of Dockweiler State Beach looking towards the beach. The photo depicts the Ice Plant Alliance adjacent to residential units.	

## Appendix C HISTORIC SOILS INFORMATION



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Los Angeles County, California, Southeastern Part



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

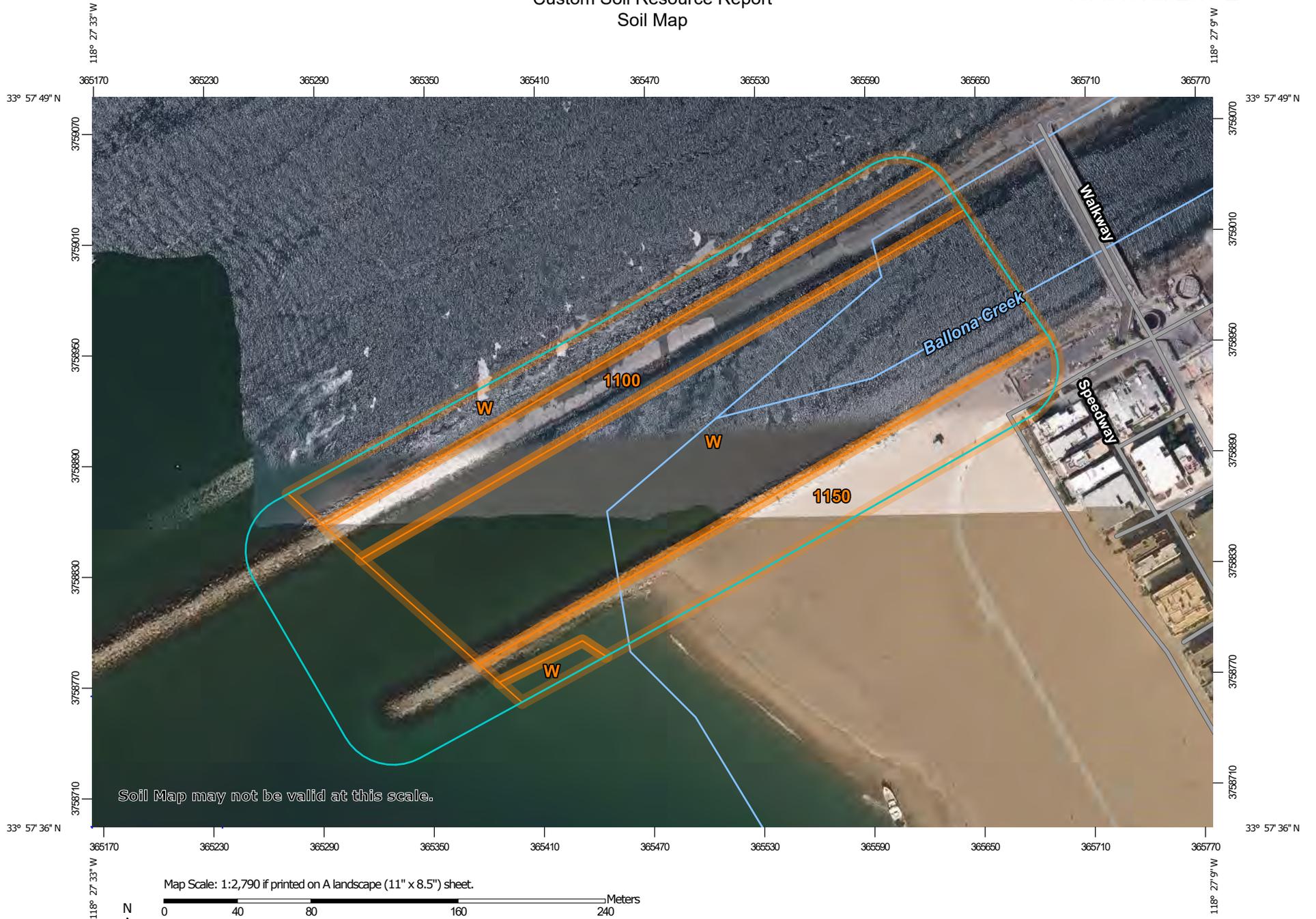
# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report  
Soil Map

ATTACHMENT E



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part  
 Survey Area Data: Version 7, May 27, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 23, 2014—Mar 13, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

**MAP LEGEND**

**MAP INFORMATION**

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1100	Urban land, 0 to 2 percent slopes, dredged fill substratum	2.5	14.7%
1150	Abaft-Beaches complex, 0 to 5 percent slopes	2.5	14.7%
W	Water	9.6	55.9%
<b>Totals for Area of Interest</b>		<b>17.2</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

## Custom Soil Resource Report

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Los Angeles County, California, Southeastern Part

### 1100—Urban land, 0 to 2 percent slopes, dredged fill substratum

#### Map Unit Setting

*National map unit symbol:* 2lts6  
*Elevation:* 0 to 20 feet  
*Mean annual precipitation:* 13 to 15 inches  
*Mean annual air temperature:* 63 to 64 degrees F  
*Frost-free period:* 360 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Urban land:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Urban Land

##### Setting

*Landform:* Islands, spits

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 0 inches to manufactured layer  
*Runoff class:* Very high  
*Frequency of flooding:* Rare

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

#### Minor Components

##### Xerorthents

*Percent of map unit:* 5 percent  
*Landform:* Islands, spits  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### 1150—Abaft-Beaches complex, 0 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2myv2  
*Elevation:* 0 to 20 feet  
*Mean annual precipitation:* 13 to 14 inches  
*Mean annual air temperature:* 62 to 64 degrees F

## Custom Soil Resource Report

*Frost-free period:* 360 to 365 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Abaft and similar soils:* 60 percent

*Beaches:* 40 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Abaft****Setting**

*Landform:* Dunes

*Landform position (three-dimensional):* Side slope, base slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Alluvium and/or eolian sands

**Typical profile**

*C1 - 0 to 20 inches:* sand

*C2 - 20 to 79 inches:* sand

**Properties and qualities**

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Very high (19.98 to 59.94 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.0 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

**Description of Beaches****Setting**

*Landform:* Beaches

*Parent material:* Beach sand

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

**W—Water**

**Map Unit Composition**

*Water:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

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## Appendix D ARID WEST INDICATOR TABLES

**Table 1. Potential Geomorphic Indicators of Ordinary High Water Marks for the Arid West**

(A) Below OHW	(B) At OHW	(C) Above OHW
1. In-stream dunes	1. Valley flat	1. Desert pavement
2. Crested ripples	2. Active floodplain	2. Rock varnish
3. Flaser bedding	3. Benches: low, mid, most prominent	3. Clast weathering
4. Harrow marks	4. Highest surface of channel bars	4. Salt splitting
5. Gravel sheets to rippled sands	5. Top of point bars	5. Carbonate etching
6. Meander bars	6. Break in bank slope	6. Depositional topography
7. Sand tongues	7. Upper limit of sand-sized particles	7. Caliche rubble
8. Muddy point bars	8. Change in particle size distribution	8. Soil development
9. Long gravel bars	9. Staining of rocks	9. Surface color/tone
10. Cobble bars behind obstructions	10. Exposed root hairs below intact soil layer	10. Drainage development
11. Scour holes downstream of obstructions	11. Silt deposits	11. Surface relief
12. Obstacle marks	12. Litter (organic debris, small twigs and leaves)	12. Surface rounding
13. Stepped-bed morphology in gravel	13. Drift (organic debris, larger than twigs)	
14. Narrow berms and levees		
15. Streaming lineations		
16. Desiccation/mud cracks		
17. Armored mud balls		
18. Knick Points		

**Table 2. Potential Vegetation Indicators of Ordinary High Water Marks for the Arid West**

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian Indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominant 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

**Table 3. Summary of Wetland Indicator Status**

Category	Probability	
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability of 67–99%)
Facultative	FAC	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34–66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	NI	No indicator status has been assigned

Source: Reed, 1988; USFWS, 1997; USACE, 2012.

**Table 4. Wetland Hydrology Indicators\***

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Water-Borne Sediment Deposits	FAC-Neutral Test
Drift Lines	Water-Stained Leaves
Drainage Patterns Within Wetlands	Local Soil Survey Data

\*Table adapted from 1987 USACE Manual and Related Guidance Documents.

**Table 5. Wetland Hydrology Indicators for the Arid West\***

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
<b>Group A – Observation of Surface Water or Saturated Soils</b>		
A1 – Surface Water	X	
A2 – High Water Table	X	
A3 – Saturation	X	
<b>Group B – Evidence of Recent Inundation</b>		
B1 – Water Marks	X (Non-riverine)	X (Riverine)
B2 – Sediment Deposits	X (Non-riverine)	X (Riverine)
B3 – Drift Deposits	X (Non-riverine)	X (Riverine)
B6 – Surface Soil Cracks	X	
B7 – Inundation Visible on Aerial Imagery	X	
B9 – Water-Stained Leaves	X	
B10 – Drainage	X	X
B11 – Salt Crust	X	
B12 – Biotic Crust	X	
B13 – Aquatic Invertebrates	X	

**Table 5. Wetland Hydrology Indicators for the Arid West\***

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
<b>Group C – Evidence of Current or Recent Soil Saturation</b>		
C1 – Hydrogen Sulfide Odor	X	
C2 – Dry-Season Water Table		X
C3 – Oxidized Rhizospheres along Living Roots	X	

\*Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

**Table 6. Field Indicators of Hydric Soil Conditions\***

1. Indicators of Historical Hydric Soil Conditions	2. Indicators of Current Hydric Soil Conditions
<ul style="list-style-type: none"> <li>a. Histosols</li> <li>b. Histic epipedons;</li> <li>c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix</li> <li>d. High organic content in surface of sandy soils</li> <li>e. Organic streaking in sandy soils</li> <li>f. Iron and manganese concretions</li> <li>g. Soil listed on county hydric soils list</li> </ul>	<ul style="list-style-type: none"> <li>a. Aquic or peraquic moisture regime (inundation and/or soil saturation for *7 continuous days)</li> <li>b. Reducing soil conditions (inundation and/or soil saturation for *7 continuous days)</li> <li>c. Sulfidic material (rotten egg smell)</li> </ul>

\*Table adapted from 1987 USACE Manual and Related Guidance Documents.

**Table 7. Hydric Soil Indicators for the Arid West\***

Hydric Soil Indicators	Hydric Soil Indicators	Hydric Soil Indicators	Hydric Soil Indicators
A1 – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Verti
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	—	F7 – Depleted Dark Surface	Other (See Section 5 of Regional Supplement, Version 2.0)
A9 – 1 cm Muck	—	F8 – Redox Depressions	—
A11 – Depleted Below Dark Surface	—	F9 – Vernal Pools	—
A12 – Thick Dark Surface	—	—	—

\* Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0. \*\* Indicators of hydrophytic vegetation and wetland hydrology must be present

## Appendix E REGULATORY BACKGROUND

## REGULATORY BACKGROUND

### SECTION 404 OF THE CLEAN WATER ACT (CWA)

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within “waters of the U.S.” (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). “Waters of the U.S.” are defined by the CWA as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” Wetlands are defined by the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.”

On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) published the Navigable Waters Protection Rule in the Federal Register to finalize a revised definition of “waters of the United States” under the Clean Water Act. The rule became effective on June 22, 2020. The 2020 ruling established four categories of jurisdictional waters (e.g., territorial seas and traditionally navigable waters; tributaries; lakes, ponds and impoundments; and adjacent wetlands), and specified exclusions for many water features that traditionally have not been regulated.

The proposed Project does not involve discharge of fill or dredge materials into Waters of the U.S.; therefore, a Section 404 permit is not required.

### SECTION 401 OF THE CWA

Section 401 of the CWA requires that any applicant for a Federal permit for activities that involve a discharge to ‘waters of the State,’ shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act. Therefore, before the USACE will issue a Section 404 or other permit, applicants intending to “discharge” to “waters of the State” must apply for and receive a Section 401 Water Quality Certification from the RWQCB. Applications to the RWQCB must include a complete CEQA document (e.g., Initial Study/Mitigated Negative Declaration) unless a CEQA exemption applies. As stated above, the proposed Project does not involve discharge of fill or dredge materials into Waters of the U.S. (no Section 404 permit required); however, the RWQCB has requested submission of a Section 401 permit application. Upon review of the application, the RWQCB will determine whether to issue a Section 401 Water Quality Certification, a Waste Discharge Requirement (WDR) permit, or that no permit/authorization is required. A CEQA statutory and categorical exemption was issued for the proposed Project by the lead agency (Los Angeles County Flood Control District).

### SECTION 1602 OF THE CALIFORNIA FISH AND GAME CODE

Provisions of the California Endangered Species Act protect State-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of take under the California Fish and Game Code (FGC). Additionally, the FGC contains lists of vertebrate species designated as “fully protected” (FGC Sections 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern (SSC) to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. SSC may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the FGC. FGC Section 3503.5 states that it is “unlawful to ‘take’, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to ‘take’, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Under Sections 3503 and 3503.5 of the FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited.

Upon further review of the Lake and Streambed Alteration statute and regulations, and in consideration of the proposed Project’s potential impacts on the Ballona Creek flood control channel, Public Works believes that formal notification pursuant to FGC Section 1602 is not required. The proposed Project will not substantially divert or obstruct the natural flow of the Ballona Creek flood control channel; will not substantially change or use any material from the Ballona Creek flood control channel’s bed, channel, or bank; and will not deposit any debris, waste, or other material into the Ballona Creek flood control channel.

## **CALIFORNIA COASTAL COMMISSION AND COASTAL ACT OF 1976**

The CCC has planning, regulatory, and permitting responsibilities, in partnership with local governments, over all “development” taking place within the coastal zone, a 1.5 million-acre area stretching 1,100 miles along the State’s coastline from Oregon to Mexico (and around nine offshore islands). The coastal zone extends seaward three miles, while its landward boundary varies from several miles inland in places such as the Eel River and the Elkhorn Slough, to as close as a few hundred feet from the shore in other areas.

The CCC’s enabling legislation, the Coastal Act of 1976, created a comprehensive coastal protection program grounded in partnerships between the CCC and local government jurisdictions (15 counties and 60 cities) within the coastal zone. Among the coastal resources specifically protected within the Coastal Act are public access to the coastline, wetlands and other environmentally sensitive habitat areas (ESHA), agriculture, low-cost visitor-serving recreational uses, visual resources, commercial and recreational fishing, and community character. Coastal streams and wetlands are also protected under the Coastal Act.

The Coastal Act Section 30231 defines a wetland as:

*...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*

The CCC’s regulations (California Code of Regulations Title 14) establishes a “one parameter definition,” which requires evidence of a single parameter to establish wetland conditions:

*Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands*

*can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. (14 CCR Section 13577).*

The “one parameter” definition adopted by the CCC is based on the general definition used by the U.S. Fish and Wildlife (USFWS) and CDFW from the USFWS wetlands classification system first published in 1979 (Cowardin et al. 1979):

*Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.*

The Coastal Act definition of a wetland does not distinguish between wetlands based on their quality. Therefore, under the Coastal Act, poorly functioning or degraded areas that meet the definition of wetlands are subject to wetland protection policies.

As the proposed Project is located within the Coastal Zone, a Coastal Development Permit is being submitted to the Coastal Commission for review and approval.

#### **SECTION 14, 10 AND 408 OF THE RIVERS AND HARBORS ACT**

Section 14 of the Rivers and Harbors Act (RHA), codified at 33 U.S.C. § 408 (often referred to as “Section 408”), requires that any proposed occupation or use of an existing USACE civil works project be authorized by the Secretary of the Army. An alteration refers to any action by any entity other than the USACE that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness or the structural or ecological integrity of a USACE project. USACE may grant such permission if it determines the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the civil works project. This means USACE has the authority to review, evaluate, and approve all alterations to federally-authorized civil works projects to make sure they are not harmful to the public and still meet the project’s intended purposes, as mandated by congressional authorization.

As the proposed Project is located near and on top of jetties currently bordering Ballona Creek, a Section 408 permit is being submitted to the USACE for review and approval.

Section 10 of the RHA is required for work conducted in, on, or over traditionally navigable waterways. A Section 10 permit is also required for the excavation and dredging or deposition of material, as well as any obstruction or alteration of a navigable water. Work outside the limits of navigable waters may require a Section 10 permit, if the structure or work affects the course, location, condition, or capacity of the water body. Navigable waters of the U.S. are those subject to the ebb and flow of the tide shoreward to the mean high water mark and are used, or have been used in the past, to transport interstate or foreign commerce (33 C.F.R. § 329.4). This includes coastal and inland waters, lakes, rivers and streams that are navigable, and the territorial seas.

As the proposed Project area contains potential navigable waters of the U.S., a Section 10 permit is being submitted to the USACE for review and approval.

## Appendix F FIELD DATA SHEETS

## OHWM Datasheet (A)

Page 1 of 4

Project Site: Ballona Creek Trash Interceptor Date: 2/25/2020  
 Location: Marina del Rey, CA Lat/Long: 33°57'45.61"N, 118°27'16.15"W  
 Investigator(s): P. Prata, R. Brown Total # of Transects/Sample Points: 1 / n/a

**General Project Site Description:**

Ballona Creek is channelized w/concrete and riprap banks and a soft sediment bottom. It's a tidally influenced channel and inundated even at low tide (16:23), and is inundated most days. Sides of channel are generally vegetation free.

**Describe the river or stream's condition (apparent disturbances, channel migration, in-stream structures, etc.):**

Trending east to northeast upstream and west to southwest downstream, inundated w/tidally influenced flows. Marina Del Rey South jetty lines northern banks. Creek flows towards breakwater that feeds into the Pacific Ocean. Ballona Creek Bridge is a pedestrian/cycling crossing at the northeast boundary of the project. Channel approximately 40-feet wide. Debris/trash present within the channel and along the banks.

**Off-site Information**

Remotely sensed image(s) acquired?  Yes  No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

See Appendix A of report.

Hydrologic/hydraulic information acquired?  Yes  No [If yes, attach information to datasheet(s) and describe below.] Description:

**Describe any other supporting information received/acquired:**

**Stream Reach Characteristics**

Approximate Length of Reach: ~ 500 ft.

Water Presence:  Flowing  Pooled  None

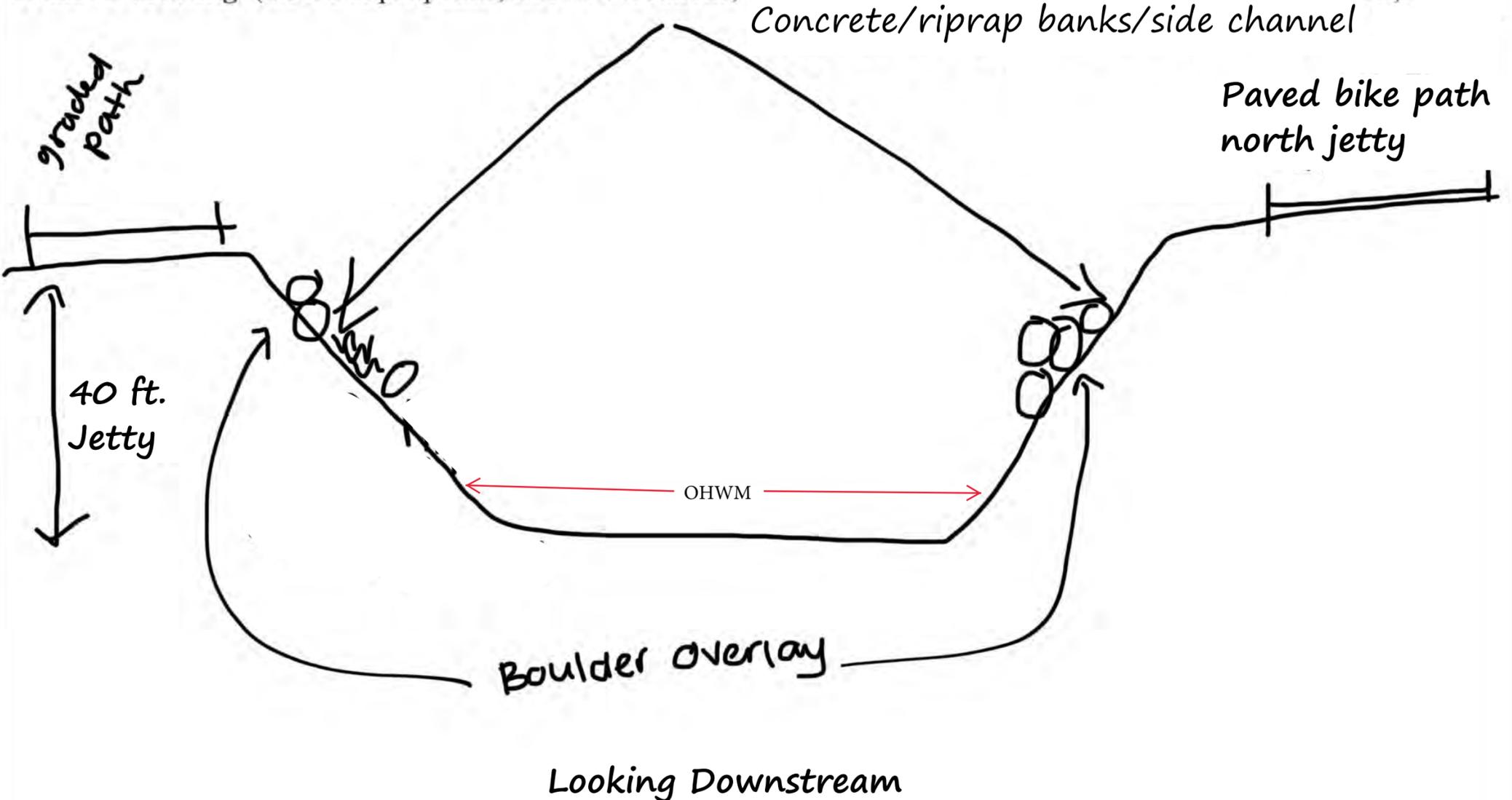
Gradient:  Low (<1%)  Moderate (1-4%)  High (>4%)  Measured \_\_\_\_\_

Reach Morphology:  Bedrock  Colluvial  Cascade  Step-pool  Plane-bed  Pool-riffle  
 Dune-ripple  Meandering  Braided  \_\_\_\_\_

Notes: *Concrete lined channel with soft sediment bottom. Inundated with tidally influenced flow.*

Transect: \_\_\_\_\_ Sample Point(s) along transect: n/a

Transect drawing (label sample points, OHWM locations, hydrogeomorphic units, and other features of interest):



## OHWM Datasheet (C)

Sample Point # \_\_\_\_\_ Lat/Long: \_\_\_\_\_ Photo #(s): \_\_\_\_\_

**Sample Point Description:**

Inundation at low tide, concrete/riprap lined banks and graded/paved paths atop jetties did not provide conditions for which test pits were possible.

**Primary Indicators**

**Break in Slope:** Yes ( Gentle (< 30°) |  Moderate (30–60°) |  Sharp (> 60°) |  Measured \_\_\_\_\_)  No

Notes: Sample point assumed to be in the center of the channel, access to soils and aquatic areas was not possible due to depth of water.

**Change(s) in Sediment Characteristics:** Yes ( Texture |  Soil Development)  No

*Sediment Characteristics ABOVE the Sample Point*

Sediment Not Accessible

Texture: Fine (<2mm): \_\_\_\_\_% Gravel (2mm-1cm) \_\_\_\_\_% Cobbles (1-10cm): \_\_\_\_\_% Boulders (>10cm) \_\_\_\_\_%

Developed Soil Horizons

Notes:

*Sediment Characteristics BELOW the Sample Point*

Texture: Fine (<2mm): \_\_\_\_\_% Gravel (2mm-1cm) \_\_\_\_\_% Cobbles (1-10cm): \_\_\_\_\_% Boulders (>10cm) \_\_\_\_\_%

Developed Soil Horizons

Notes:

**Change(s) in Vegetation:** Yes ( Cover Density |  Growth Form Stage |  Species Composition)  No

*Vegetation Characteristics ABOVE the Sample Point*

Total Vegetation Cover: \_\_\_\_\_% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: 25% Bare Ground: 75%

Mean Stage of Growth Forms:  Young  Moderate  Mature

Species Present (WIS): \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( )

Notes: Refer to Section 4 and Appendix A of JD report.

*Vegetation Characteristics BELOW the Sample Point*

Total Vegetation Cover: \_\_\_\_\_% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: \_\_\_\_\_% Bare Ground: 100%

Mean Stage of Growth Forms:  Young  Moderate  Mature

Species Present (WIS): \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( )

Notes: Refer to Section 4 and Appendix A of JD report.

**Supporting Features** (check all that apply)

Feature	Above	At	Below
Drift			
Erosion/scour			
Bank undercutting			
Root exposure			
Point bars			
Water stains			
Litter removal			
Silt deposits			
Shelving			
Macro-invertebrates			

Notes: None

Does this sample point describe the OHWM?  Yes  No

If yes, do you have at least two primary indicators at this sample point?  Yes  No

Describe the reasoning and evidence for choosing (or not choosing) this sample point as the OHWM location:  
 OHWM was determined based on signs of water levels along the banks including vegetation lines.

**Additional Notes:**

Drift and Debris present




---

To:	Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer	From:	Kaela Johnson, Environmental Planner
	Los Angeles County of Public Works 900 S. Fremont Ave. Alhambra, CA 91803		Stantec Consulting Services, Inc. 1340 Treat Boulevard, Suite 300 Walnut Creek, CA 94597
File:	185804807	Date:	March 22, 2022

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### Reference: Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

Stantec Consulting Services Inc. (Stantec) is submitting this memorandum (memo) to Los Angeles County Public Works (LACPW) to assess potential visual effects from light and glare associated with operation of the proposed Ballona Creek Trash Interceptor™ Pilot Project (Pilot Project) in the City of Los Angeles, California. An overview of the Pilot Project is provided immediately below, followed by a description of the existing setting, applicable policies and regulations, Interceptor™ lighting characteristics, and an evaluation of the Pilot Project lighting. The Pilot Project lighting evaluation is based on a comparison between existing lighting conditions and anticipated lighting associated with the Pilot Project.

### PROJECT OVERVIEW

The purpose of the Pilot Project is to capture and collect trash and debris in Ballona Creek before it enters the Pacific Ocean. The Interceptor™ system would be installed near the mouth of Ballona Creek where trash and debris flow into the ocean, between the communities of Marina del Rey and Playa del Rey. The Interceptor would consist of a single vessel that is 74 feet in length, 29 feet wide, and 18.5 feet in height. It would be moored in Ballona Creek via six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along the two existing jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor. The floating debris will converge on the Interceptor’s mechanical conveyor belt, which automatically feeds the trash into a floating receptacle to prevent the refuse from reaching the Pacific Ocean. The trash is anticipated to be composed of approximately 75% inorganic and 25% organic wastes and would not exceed the maximum barge capacity of 65 cubic yards at any time.

The Interceptor™ would operate 24 hours a day and is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15).

### APPLICABLE REGULATIONS

The Interceptor™, although not navigable on its own, may still be considered a vessel subject to specific lighting regulations if within an area that has some form of regular boat traffic as, in the event of emergencies, lifeguard boats may need to pass through the waterway. As such, the Pilot Project could be subject to federal and state regulations as implemented by the United States Coast Guard (USCG) and California Division of Boating and Waterways. Specifically, Title 33, Part 83(c) of the Code of Federal Regulations (CFR), requires vessels to display lights from sunset to sunrise. It also requires anchored vessels less than 50 meters (164 feet) in length to provide a white all-around navigation light where it can best be seen. This lighting requirement is consistent with regulations and lighting standards for all vessels within the vicinity of the Marina del Rey Harbor. The analysis in this memo assumes such lighting requirements would apply to the Pilot Project, though recommended consultation with USCG may indicate otherwise.

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 Los Angeles County of Public Works  
 Page 2 of 3

**Reference:** Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

### Los Angeles County 2035 General Plan

The Conservation and Natural Resources Element of the Los Angeles County 2035 General Plan includes the following goal and policy aimed to reduce light and glare on scenic resources:

- **Goal C/NR 13. Protected visual and scenic resources.**
  - **Policy C/NR 13.3. Reduce light trespass, light pollution, and other threats to scenic resources.**

### Los Angeles County Municipal Code

The Los Angeles County Municipal Code includes the following requirements pertaining to lighting within a county harbor or waterway:

- **19.12.1150 – Hazardous lights prohibited.** *It is unlawful for a person responsible for same to place, erect or install within a county harbor, waterway, or maritime facility any light fixtures in such manner as to constitute a hazard to operators of vessels in navigating at night.*

### City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code includes the following requirements pertaining to outdoor lighting affecting residential property:

- **Chapter 9, Article 3, Section 93.0117.** *No exterior light source may cause more than two footcandles (21.5 lx) of lighting intensity or generate direct glare onto exterior glazed windows or glass doors; elevated habitable porch, deck, or balcony; or any ground surface intended for uses such as recreation, barbecue or lawn areas or any other property containing a residential unit or units.*

## EXISTING SETTING

The Pilot Project is located in the City of Los Angeles, California, between the communities of Marina del Rey and Playa del Rey, approximately 1.5 miles west of CA-1 and 0.5 mile east of the Santa Monica Bay. The Pilot Project site consists of a 4.96-acre channelized portion of Ballona Creek, immediately southwest of the Ballona Creek-Pacific Avenue Bridge. Ballona Creek is an urban, soft bottom flood control channel that is bordered by two concrete jetties to the north and south (referred herein as the Ballona Creek North Jetty and Ballona Creek South Jetty). The Ballona Creek North Jetty is topped by a publicly accessible sidewalk and contains two viewing decks with concrete benches surrounded by a guardrail. The Ballona Creek South Jetty is supported by a shorter jetty on the opposite side which is covered with a jagged rock outcrop. The Ballona Creek North and South jetties are each equipped with a green navigation light that flashes every four and six seconds, respectively. The North and South breakwaters are also each equipped with a red navigation light that flashes every six and four seconds, respectively (LACDBH 2022).

The area surrounding the Pilot Project site is predominantly urban and characterized by the mix of multi-family residences, open space, and recreational uses located along the Marina del Rey Harbor and the Playa del Rey Beach. Multi-family residential developments are located east of the Pilot Project site along 62<sup>nd</sup> Avenue and Pacific Avenue. Residences along the frontage of Playa del Rey Beach and 62<sup>nd</sup> Avenue overlook portions of Ballona Creek from their exterior balconies and would have views of the Pilot Project site. The Pilot Project site is also visible from the nearby open space and recreational land uses, including from the

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**Reference:**      **Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

Marina del Rey Harbor, Ballona Creek Bicycle Path, and Playa del Rey Beach. Stantec took photographs from these surrounding land uses to demonstrate existing sources of light during daytime conditions and at dusk. The location of the Pilot Project and four viewpoints where photographs were taken are shown in Figure 1. Existing views of the Pilot Project site during the day and at dusk are shown in Figures 2 through 5.

The land uses surrounding the Pilot Project site are the main source of daytime glare and nighttime lighting. In general, there is moderate glare and nighttime lighting from these land uses, typical of urban areas and active harbors. Daytime glare is primarily generated from parked cars and passing vehicles, glass windows and reflective building materials, and from the reflection of the sun on the water's surface. Nighttime sources of light are concentrated in the populated areas and the harbor, which includes the previously described green navigation lights on the Ballona Creek North and South jetties and red navigation lights on the North and South breakwaters to alert boats entering the Marina del Rey Harbor (LACDBH 2022). Other sources of nighttime lighting consist of navigation lighting on recreational and commercial boats within the Marina del Rey Harbor and Pacific Ocean, street lighting along 62<sup>nd</sup> Avenue and Pacific Avenue, residential exterior and interior lighting, and headlights from vehicles travelling on the adjacent residential streets.

## **INTERCEPTOR™ LIGHTING CHARACTERISTICS**

The Pilot Project would place lights on the roof of the Interceptor™ and the trash booms for safety and navigational purposes and would operate from sunset to sunrise. Standard lighting placed on the roof of the Interceptor™ consists of two white NaviLED 360 Compact Anchor Lamps. Previous Interceptor deployments have also included Sealite SL-15 LED navigation lights placed on the trash booms every 20 meters or approximately 66 feet. Each trash boom is approximately 236 feet in length, which would result in the placement of up to four LED navigation lights on each trash boom (or eight LED navigation lights total). LED lighting strips would be placed along either side of the Interceptor™ canopy, which is approximately 74 feet in length. The lighting strips would consist of white LED lights for aesthetic purposes and would have a power output of 65 watts.

All Pilot Project lighting would be designed to not shine light directly on the water surface to minimize glare impacts. The Interceptor™ would be painted blue and white; however, reflective ribbon may be used to deter bird species from nesting or landing on the vessel.

## **LIGHTING ANALYSIS**

While operation of the Pilot Project would introduce new sources of light and glare within the Pilot Project area, these lights would be similar to existing sources of nighttime lighting from recreational and commercial vessels in and around the Marina del Rey Harbor. The Pilot Project would be located within an urbanized setting, where light-emitting sources are common and present in views up and down the shoreline and within developed areas. Specifically, the omni-directional navigation lights presumed to be required for the Pilot Project would be similar in visibility and intensity to lighting required for any operational vessel in the harbor area. Though not currently present within Ballona Creek, such navigation lighting is common throughout the broader harbor area—on jetties, the breakwater, and on boats coming in and out of the harbor—and something to which viewers are therefore likely habituated to seeing.

## **CONCLUSION AND RECOMMENDATIONS**

The Interceptor™ is not considered a seafaring vessel since it will be anchored in place at the mouth of Ballona Creek. Nevertheless, this memo assumes that navigation lighting requirements for seafaring vessels

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**Reference:** Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

would apply to the Pilot Project, given its placement within Ballona Creek and proximity to the Marina del Rey Harbor where there is existing maritime traffic. However, it is recommended that LACPW coordinate with USCG to confirm whether the Interceptor™ would be required to provide safety navigational lighting and if so, the number of lights required for an anchored vessel.

**Stantec Consulting Services Inc.**



**Kaela Johnson**  
Environmental Planner  
Phone: (925) 296-2121  
Email: [kaela.johnson@stantec.com](mailto:kaela.johnson@stantec.com)

Attachment: Figure 1: Project Location and Viewpoints  
Figure 2: Viewpoint 01 – Ballona Creek-Pacific Avenue Bridge  
Figure 3: Viewpoint 02 – Ballona Creek Bicycle Path/ Playa del Rey Beach  
Figure 4: Viewpoint 03 – Ballona Creek Bicycle Path  
Figure 5: Viewpoint 04 – Playa del Rey Beach

C: Josh Hohn, Stantec

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Los Angeles County of Public Works  
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**Reference:**     **Lighting Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

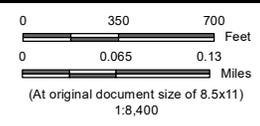
## REFERENCES

- City of Los Angeles. 2021. City of Los Angeles Municipal Code, Chapter 9, Article 3, Section 93.0117: Outdoor Lighting Affecting Residential Property. [https://codelibrary.amlegal.com/codes/los\\_angeles/latest/lamc/0-0-0-183817](https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-183817). Accessed September 8, 2021.
- Los Angeles County. 2015. Los Angeles County General Plan, Chapter 9: Conservation and Natural Resources Element. [https://planning.lacounty.gov/assets/upl/project/gp\\_final-general-plan-ch9.pdf](https://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch9.pdf). Accessed September 8, 2021.
- \_\_\_\_\_. 2021. Los Angeles County Municipal Code, Title 19 – Airports and Harbors. [https://library.municode.com/ca/los\\_angeles\\_county/codes/code\\_of\\_ordinances?nodeId=TIT19AIHA](https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT19AIHA). Accessed September 8, 2021.
- Los Angeles County Department of Beaches and Harbors (LACDBH). 2022. Marina Del Rey Navigation and Regulations. <https://beaches.lacounty.gov/marina-del-rey-navigation-and-regulations/>. Accessed March 14, 2022.

# ATTACHMENT



- Viewpoint Location
- Existing Bikeways
- Project Footprint**
- Mooring Footprint
- Mooring Construction Staging Areas
- Interceptor/ Mooring Chains/ Trash Boom Footprint
- Trash Boom
- Mooring Lines



*Project Location* Ballona Creek  
 Los Angeles County, California

*Prepared by DL on 2021-09-01*  
*TR by ST on 2021-09-01*  
*IR by LM on 2021-09-01*

*Client/Project* Los Angeles County Public Works  
 Ballona Creek Trash Interceptor Pilot Project  
 Lighting Memo

184031268

*Figure No.*  
**1**

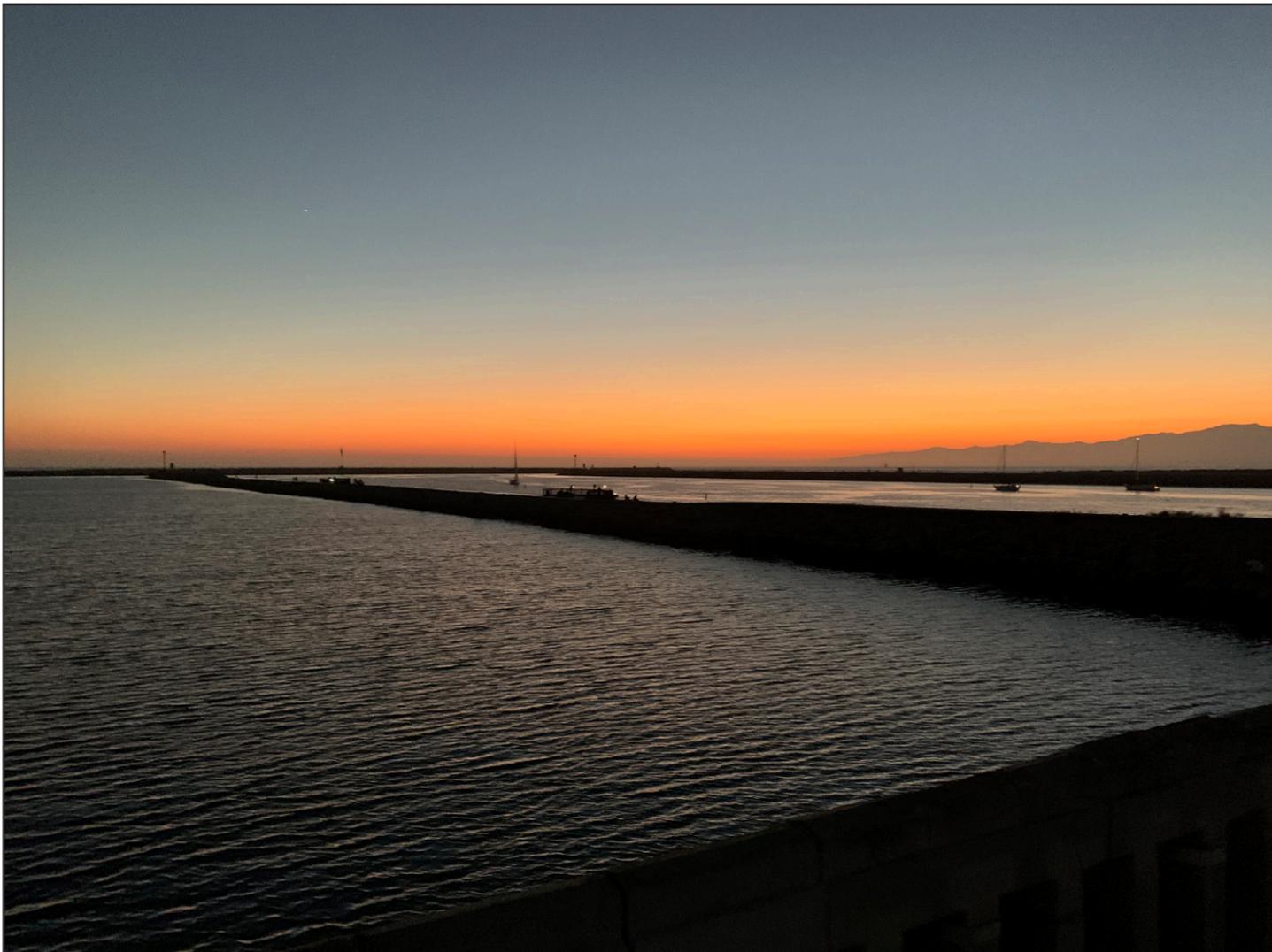
*Title*  
**Project Site and Viewpoint Locations**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 2. Data Sources: Stantec 2020.  
 3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

V:\1858\active\184031268\05\_report\_deliv\dwg design\ais figures\MXD\Lighting\_MXD\Figure1\_LightingMemo\_ProjectVicinity\_09012020.mxd Revised: 2021-09-02 By: dalaw



2a) Existing daytime view to the southwest from Viewpoint 01. The Project would be 0.2 mile away and would be visible to pedestrians and bicyclists while crossing the Ballona Creek-Pacific Avenue Bridge, and to residences located along 62<sup>nd</sup> Avenue.



2b) Existing view to the west-northwest from Viewpoint 01 at dusk.



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*Project Location*  
Ballona Creek  
Los Angeles County, California

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*Client/Project*  
Los Angeles County Public Works  
Ballona Creek Trash Interceptor Pilot Project

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*Lighting Memo*  
**2**

---

*Title*  
**Viewpoint 01 - Ballona Creek- Pacific Avenue Bridge**



3a) Existing daytime view to the west-northwest from Viewpoint 02. The Project would be 0.1 mile away and would be visible to pedestrians and bicyclists using the Ballona Creek Bicycle Path and Playa del Rey Beach.



3b) Existing view to the west-northwest from Viewpoint 02 at dusk.



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*Project Location*  
Ballona Creek  
Los Angeles County, California

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*Client/Project*  
Los Angeles County Public Works  
Ballona Creek Trash Interceptor Pilot Project

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*Lighting Memo*  
**3**

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*Title*  
**Viewpoint 02 - Ballona Creek Bicycle Path/  
Playa del Rey Beach**



4a) Existing daytime view to the north from Viewpoint 03. The Project would be 0.1 mile away and would be visible to pedestrians and bicyclists using the Ballona Creek Bicycle Path.



4b) Existing view to the north from Viewpoint 03 at dusk.



*Project Location*

Ballona Creek  
Los Angeles County, California

*Client/Project*

Los Angeles County Public Works  
Ballona Creek Trash Interceptor Pilot Project  
Lighting Memo

*Figure No.*

**4**

*Title*

**Viewpoint 03- Ballona Creek Bicycle Path**



5a) Existing daytime view to the north from Viewpoint 04. The Project would be 0.25 mile away and barely detectable from this distance as it would become absorbed with existing development.



5b) Existing view to the north from Viewpoint 04 at dusk.



*Project Location*

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Los Angeles County, California

*Client/Project*

Los Angeles County Public Works  
Ballona Creek Trash Interceptor Pilot Project  
Lighting Memo

*Figure No.*

**5**

*Title*

**Viewpoint 04- Playa del Rey Beach**




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To:	Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer  Los Angeles County Public Works 900 S. Fremont Ave. Alhambra, CA 91803	From:	Emily Ramos, Staff Scientist  Stantec Consulting Services Inc. 290 Conejo Ridge Avenue Thousand Oaks, CA 91361
File:	185804807	Date:	March 15, 2022

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**Reference: Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

Stantec Consulting Services Inc. (Stantec) is submitting this memorandum (memo) to Los Angeles County Public Works (LACPW) to analyze potential noise nuisance to adjacent residential and public recreation sensitive receptors as a result of the Ballona Creek Trash Interceptor™ Pilot Project (Pilot Project). This memo includes a description of existing noise sources near the Pilot Project; a summary of the existing noise setting; a description of the local regulatory background; and a summary of the data-gathering methods, and results.

**PROJECT OVERVIEW**

The purpose of the Pilot Project is to capture and collect trash and debris in Ballona Creek before it enters the Pacific Ocean. The Interceptor™ system would be installed near the mouth of Ballona Creek where trash and debris enters the ocean, between the communities of Marina del Rey and Playa del Rey. The Interceptor™ would consist of a single vessel that is 74 feet in length, 29 feet wide, and 18.5 feet in height. It would be moored in Ballona Creek via six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along the two existing jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor™’s mechanical conveyor belt, which automatically feeds the trash into a floating receptacle to prevent the refuse from reaching the Pacific Ocean. The trash is anticipated to be composed of approximately 75% inorganic and 25% organic wastes and would not exceed the maximum barge capacity of 65 cubic yards at any time.

The Interceptor™ would operate 24 hours a day and is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15).

The Interceptor™ will include the following noise-producing features:

- **Barrier:** River waste flowing with the current of the Creek will be guided by the barrier towards the opening of the Interceptor™. The Interceptor™’s catamaran design will optimize the water flow path as it passes through the system, carrying the plastic onto the conveyor belt.
- **Conveyor Belt:** The current of the creek will move the debris onto a conveyor belt that will continuously extract the debris from the water and will deliver the waste to the shuttle. Movement of the mechanical conveyor components will make noise. The motor and movement of the trash onto the Interceptor™ will make noise.
- **Shuttle System:** A shuttle will automatically distribute the debris across six dumpsters. Using sensor data, the containers will be filled equally until they reach full capacity. Distribution of the trash will make noise.

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Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer

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**Reference:**      **Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

- **Trash Transportation (Empty and Recycle):** When the Inceptor™'s dumpster bins are almost full, a text message will be automatically sent to the local operators. Operators will then remove the dumpster barge, transfer it on a small vessel from the Interceptor™ to Marina del Rey Harbor for offloading, empty the dumpsters, send the debris to local waste management facilities, and return the barge back into the Interceptor™. The process of transporting the dumpster barge, offloading the trash, and returning the empty dumpster barge to the Interceptor™ will make noise.

The nearest residential receptors are a series of multi-family homes located along the southern side of Ballona Creek approximately 450 feet southeast of the Interceptor™. The nearest recreational receptor is the nearby walkway south of the Ballona Creek Bridge, which is located approximately 480 feet northeast of the Interceptor™.

## CHARACTERISTICS OF NOISE

The City of Los Angeles General Plan defines ambient sound as “the background sound that aggregates all sound emissions, far and near, as received within a particular locale” and intrusive sound as “greater than the ambient sound level”. The General Plan defines noise as “unwanted sound and, therefore, is an important factor in the quality of urban life” (City of Los Angeles 1999).

Two major dimensions define sound waves: frequency and amplitude. Frequency is defined as the number of sound waves passing a singular point during a specified duration of time. This attribute is generally measured in Hertz (Hz). Humans can generally hear sounds between 16 to 20,000 Hz, depending on both the individual and the sound itself. Deeper sounds are associated with lower Hz, while higher-pitched sounds are associated with a higher Hz.

Amplitude is defined as the change between the peak (highest amplitude value) and the trough (lowest amplitude value) of a sound wave. This attribute is associated with the intensity or loudness of the sound and is measured in decibels (dB). Decibels are measured on a logarithmic scale.

This means that multiplying a 10 dB sound's loudness by a factor of 10 corresponds to an increase in volume to 20 dB. As a rule of thumb, a 1 dB change in sound level is hard to notice, a 3 dB change is clearly noticeable, and a 10 dB increase will be nearly twice as loud (while a 10 dB decrease would be nearly half as loud).

Because decibels are logarithmic, they cannot be manipulated in the same way as arithmetic numbers. Addition of decibels produces results such as  $60\text{ dB} + 60\text{ dB} = 63\text{ dB}$ . When the difference between two sound levels is greater than about 10 dB, the lesser sound is negligible in affecting the total level. Sound level also diminishes with distance. From a single point, the rate at which the sound reduces in force is inversely proportional to the square of the distance from the source. This means the sound level will drop 6 dB for every doubling of the distance from the point source. A “line” source of sound, such as a street, behaves differently, and the sound level decreases by about 3 dB for each doubling of distance.

The A-weighted decibel (dBA) is a method of sound measurement which assigns weighted values to selected frequency bands to reflect how the human ear responds to sound. The range of human hearing is from 0 dBA (the threshold of hearing) to about 140 dBA which is the threshold of pain. Equivalent sound level (Leq) is a single decibel value that represents the constant noise level over a designated period of time. Community Noise Equivalent Level (CNEL) is the average sound level over a 24-hour period, with a penalty of 5 dBA added for evening hours (19:00 to 22:00) and a penalty of 10 dBA added for nighttime hours (22:00 to 07:00).

March 15, 2022

Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer

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**Reference:** Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

## EXISTING SETTING

The Pilot Project proposes placement of the Interceptor™ near the community of Playa Del Rey in the middle of Ballona Creek, where it meets the Pacific Ocean. The Pilot Project area has a General Plan land use designation of Open Space and is zoned Open Space (City of Los Angeles 2004). Surrounding land uses include Medium and Low Residential.

The Pilot Project area is located northwest of the Los Angeles International Airport, approximately 1.7 miles away from Runway 6/24. Commercial aircrafts that are low in the sky (i.e., recently departed or are soon to land) fly over the Pilot Project area frequently and are a major source of ambient noise in the area. Other sources of ambient noise close to the Pilot Project include: cars driving along Pacific Avenue, Speedway, and the adjacent side streets; music played on speakers carried by bikers passing through the area; and general conversation from nearby recreation users. The side street that connects the Ballona Creek Bridge to the Ballona Creek Bike Path (62<sup>nd</sup> Avenue) is located between the residential receptors and the Pilot Project and experiences substantial foot traffic throughout the day and into the evening.

### Ambient Noise Level Measurements

Stantec measured ambient noise levels along the northern property line of the nearest residence, 6201 Speedway, and adjacent to the south edge of the Ballona Creek Bridge. Measurements could not be taken directly on the bridge due to frequent bike traffic. One hour-long measurements were taken at each location during the day (07:00 to 19:00), evening (19:00 to 22:00), and night (22:00 to 07:00), for a total of three measurements at each location on each day. Measurements were taken on a Friday and a Saturday to account for the potential differences in noise levels on weekdays and weekends.

A Casella CEL-633 Type 1 sound level meter was used to perform measurements. Per recommendations in the City of Los Angeles Noise Ordinance, the sound level meter was placed approximately five feet above the ground, recorded A-weighted measurements, and was calibrated prior to each reading (Los Angeles, Municipal Code ch. 9, § 2 (1982)). Ambient noise level measurements and period averages between the two days can be viewed in Table 1 below.

**Table 1 Ambient Noise Level Measurements**

Location	Period	Date	Start Time	Leq (dBA)	Average Leq (dBA)
6201 Speedway	Day	8/27/2021	14:24	65.2	64.5
		8/28/2021	14:05	63.8	
	Evening	8/27/2021	19:00	54.2	61.0
		8/28/2021	19:00	67.8	
	Night	8/27/2021	22:00	64.7	60.7
		8/28/2021	22:00	56.6	
Ballona Creek Bridge	Day	8/27/2021	15:30	57.0	59.7
		8/28/2021	15:15	62.4	
	Evening	8/27/2021	20:10	50.9	55.45
		8/28/2021	20:10	60.0	

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**Reference:** Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

Location	Period	Date	Start Time	Leq (dBA)	Average Leq (dBA)
	Night	8/27/2021	23:10	52.4	54.3
		8/28/2021	23:10	56.2	

**NOISE ANALYSIS**

Neither the City of Los Angeles General Plan Noise Element nor the Noise Ordinance identify land-use specific allowable noise levels or significance criteria applicable to determining the Pilot Project’s potential operational noise impacts. However, the Los Angeles California Environmental Quality Act (CEQA) Thresholds Guide (City of Los Angeles 2006) includes land-use specific significance thresholds for noise levels, which are included in Table 2 below. According to the guide, a project would be considered to have a significant impact on noise levels from project operations if the project caused the ambient noise level to increase by 3 dBA to or within the “normally unacceptable” or “clearly unacceptable” categories, or any 5 dBA or greater noise increase. Thresholds for the “Multi-Family Homes” land use are presented because 6201 Speedway is an apartment building, and thresholds for the “Playgrounds, Neighborhood Parks” land use are presented because of the uses presented in the guide and given it is the closest recreational use to that of the Ballona Bridge.

**Table 2 Significance Thresholds (CNEL)**

Land Use	Normally Acceptable (dBA)	Conditionally Acceptable (dBA)	Normally Unacceptable (dBA)	Clearly Unacceptable (dBA)
Multi-Family Homes	50 - 65	60 - 70	70 - 75	Above 70
Playgrounds, Neighborhood Parks	50 - 70	-	67 - 75	Above 72

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

(City of Los Angeles 2006)

Based on data gathered from The Ocean Cleanup from previously deployed Interceptors™, operational noise from the Interceptor™ is estimated to be approximately 65 to 70 dBA. For the purposes of this analysis, Stantec conservatively assumes a sound level of 70 dBA at 50 feet away from the Interceptor™. Based on the standards above, all ambient noise measurements listed in Table 1 are within the normal or acceptable ranges for their land uses as established by the Los Angeles CEQA Thresholds Guide.

Table 3 below includes an analysis, which considers the Interceptor™’s operational noise levels in conjunction with ambient noise levels. Leq noise measurements were converted to CNEL in order to assess them based on the above standards. Pilot Project Noise Level at the Receptor is the level of Interceptor™ noise heard at each receptor based on the understanding that the sound level will drop 6 dB for every

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Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer  
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**Reference:** Operational Noise Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

doubling of the distance from the point source. No ground attenuation was assumed to provide a conservative analysis. The Average Ambient Noise Level at the Receptor is the average of the two sets of measurements taken each day.

**Table 3 Operational Noise Analysis**

Noise Sensitive Receptor	Period	Pilot Project Noise Level at Receptor (Leq dBA)	Average Ambient Noise Level at Receptor (Leq dBA)	Pilot Project plus Ambient Noise Levels at Receptor (Leq dBA)	Increase at Receptor with Pilot Project (Leq dBA)	Average Ambient Noise level (CNEL dBA)	Pilot Project with Ambient Noise Levels (CNEL dBA)	Increase at Receptor with Pilot Project (CNEL dBA)
Residential (6201 Speedway)	Day	50.9	64.5	64.7	0.2	68.0	68.4	0.4
	Evening	50.9	61.0	61.4	0.4			
	Night	50.9	60.7	61.1	0.4			
Recreation (Ballona Creek Bridge)	Day	50.4	59.7	60.2	0.5	62.1	63.3	1.2
	Evening	50.4	55.5	56.7	1.2			
	Night	50.4	54.3	55.8	1.5			

## CONCLUSION AND RECOMMENDATIONS

For the purposes of this noise evaluation, Stantec has conservatively used a 3 dBA increase as a threshold for this operational noise analysis. As shown in Table 3 above, the greatest anticipated increase in Leq at the residential receptor would be 0.4 dBA; the greatest anticipated increase in Leq at the recreational receptor would be 1.5 dBA; the anticipated increase in CNEL at the residential receptor would be 0.4 dBA; and the anticipated increase in CNEL at the recreational receptor would be 1.2 dBA. All anticipated increases in dBA are below the 3 dBA threshold in the Los Angeles CEQA Thresholds Guide, which has been adopted for the purposes of this noise evaluation. Based on that standard, the Interceptor™ would not cause a substantial increase in noise levels at the nearest residential and recreational receptors.

**Stantec Consulting Services Inc.**



**Emily Ramos**  
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\_\_\_\_\_. 2006. L.A. CEQA Thresholds Guide. <https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/A07.pdf>. Accessed September 2021.




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To:	Mark Beltran Civil Engineer and Seta Marjanian, Associate Civil Engineer  Los Angeles County of Public Works 900 S. Fremont Ave. Alhambra, CA 91803	From:	Kaitlyn Heck, Air Quality Specialist  Stantec Consulting Services, Inc. 300 North Lake Ave., Suite 400 Pasadena, CA 91101
File:	185804807	Date:	March 15, 2022

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## Reference: Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

Stantec Consulting Services Inc. (Stantec) is submitting this memorandum (memo) to Los Angeles County Public Works (LACPW) to analyze potential odor nuisance to adjacent residential and public sensitive receptors as a result of the Ballona Creek Trash Interceptor™ Pilot Project (Pilot Project). This memo includes a brief description of the existing trash conditions in Ballona Creek (creek), atmospheric conditions, and the existing odor sources in the Pilot Project area, which includes the coastal Santa Monica Bay area. This analysis evaluates how potential odor pollutants are expected to disperse based on wind conditions in the Pilot Project area and summarizes odor pollutants occurring from similar projects in the region.

## PROJECT OVERVIEW

The purpose of the Pilot Project is to capture and collect trash and debris in Ballona Creek before it enters the Pacific Ocean. The Interceptor™ system would be installed near the mouth of Ballona Creek where trash and debris enters the ocean, between the communities of Marina del Rey and Playa del Rey. The Interceptor™ would consist of a single vessel that is 74 feet in length, 29 feet wide, and 18.5 feet in height. It would be moored in Ballona Creek via six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along the two existing jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor™. The floating debris will converge on the Interceptor’s mechanical conveyor belt, which automatically feeds the trash into a floating receptacle to prevent the refuse from reaching the Pacific Ocean. The trash is anticipated to be composed of approximately 75% inorganic and 25% organic wastes and would not exceed the maximum barge capacity of 65 cubic yards at any time.

The Interceptor™ would operate 24 hours a day and is expected to be deployed and in operation for up to 24 months, to encompass two storm seasons (October 15 to April 15).

## APPLICABLE REGULATIONS

### *Federal*

Environmental odors are not nationally regulated in the United States.

### *State*

**State Water Resources Control Board.** The State Water Resources Control Board (the State Water Board) was created by the Legislature in 1967. The mission of the Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. There are nine Regional Water Quality Control Boards, and the missions of the Regional Boards are to

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**Reference:**      **Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters, recognizing local differences in climate, topography, geology and hydrology.

**Water Quality Control Plan for Ocean Water of California to Control Trash.** On April 7, 2015, the California State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Water of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. The amendments include the following: (1) establish a narrative water quality objective for trash, (2) corresponding applicability, (3) establish a prohibition on the discharge of trash, (4) provide implementation requirements for permitted storm water and other discharges, (5) set a time schedule for compliance, and (6) provide a framework for monitoring and reporting requirements.

**California Code of Regulations, Section 41700 of the California Health and Safety Code.** The code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This code became effective in 2014.

### **Local**

**Standard Urban Stormwater Mitigation Plan.** The Standard Urban Stormwater Mitigation Plan (SUSMP), approved by the Los Angeles Regional Water Quality Control Board on March 8, 2000, was developed as part of the municipal stormwater program to address stormwater pollution from new development and redevelopment by the private sector. The SUSMP contains a list of the minimum required best management practices (BMPs) that must be used for a project. Additional BMPs may be required by ordinance or code adopted by the Permittee and applied generally, or on a case-by-case basis. Developers must incorporate appropriate SUSMP requirements into their project plans. The SUSMP is designed to eliminate 85 percent of the pollutants in stormwater runoff from new developments.

**City of Los Angeles Low Impact Development (LID) Ordinance.** The provisions of the LID ordinance (Ordinance No. 181,899), adopted by the City Council on September 28, 2011, are designed to mitigate the impacts of increases in runoff and stormwater pollution as close to the source as possible. LID comprises a set of site design approaches and BMPs that promote the use of natural systems for infiltration, evapotranspiration, and use of stormwater. The LID Ordinance requires projects to incorporate LID standards and practices to encourage the beneficial use of rainwater and urban runoff, reduce stormwater runoff, promote rainwater harvesting, and provide increase groundwater recharge.

**SCAMQD District Rule 402 (Nuisance).** Rule 402 was adopted May 7, 1976 and states a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoying to any considerable number of persons or to the public, or which endanger the comfort, report, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

## **EXISTING SETTING**

### **Trash**

According to the California Coastal Commission, the top ten trash items collected from beach, inland waterways, coastal waters, and underwater areas across California from 1988 to 2017 include: (1) cigarettes

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**Reference:**      **Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

and cigarette filters; (2) food wrappers and containers; (3) caps and lids; (4) bags (paper and plastic); (5) cups, plates, forks, knives, and spoons; (6) straws and stirrers; (7) glass beverage bottles; (8) plastic beverage bottles; (9) beverage cans; and (10) building materials (California Coastal Commission 2019).

Trash can be transported into waterbodies through direct and indirect activities. A major source of trash is improperly discarded wastes, thrown or deposited on land and in water bodies. If trash occurs on land, it is commonly transported to nearby water bodies by wind and/or rain or dry weather runoff. Primary sources and transport mechanism for trash into state waters include:

- Littering by the public on or adjacent to waterways;
- Storm events draining watersheds and carrying trash originating from littering, inadequate waste handling or illegal dumping via the storm drain system to receiving waters;
- Wind-blown trash, also originating from littering, inadequate waste handling or illegal dumping;
- Illegal dumping into or adjacent to water bodies, and;
- Direct disposal of trash into water bodies from vessels involved in commercial, military, fishing, or recreational activities.

The California Regional Water Quality Control Board for the Los Angeles Region is responsible for maintaining clean waterbodies throughout the Los Angeles area. In order to maintain clean water that is available for recreation and natural habitat, the board sets total maximum daily loads (TMDL) for pollutants. In September 2001, the Board set the Trash TDML in Ballona Creek to zero (California Regional Water Quality Control Board 2001).

The existing trash capture method in Ballona Creek is a trash boom that was installed from Lincoln to Hoover Boulevard over twenty years ago. During the 2018-2019 storm season, the Los Angeles County Flood Control District removed 37 tons of trash from the trash boom. Smaller organizations including the Ballona Creek Renaissance also work to remove trash from Ballona Creek. On average, Ballona Creek Renaissance removes an additional 1.3 tons of trash from Ballona Creek every year (Los Angeles Department of Public Works 2020).

### ***Average Weather Conditions***

Ballona Creek is a 9-mile-long creek that runs through the 130 square mile Ballona Creek Watershed that encompasses portions of the City of Los Angeles, Beverly Hills, Inglewood, Santa Monica, West Hollywood, Culver City, and unincorporated County. The Interceptor™ would be placed along the coast at the western end of Ballona Creek to collect trash before it flows into the Santa Monica Bay and the Pacific Ocean. The coastal area of Los Angeles experiences warm, arid summers and cool, cloudy winters. In the Santa Monica area and western coast of Los Angeles, the warm season lasts approximately 3.2 months, from July to October. The cool season lasts approximately 4.1 months, from December to April. Over the course of the year, the temperature in coastal Los Angeles typically varies from 49 degrees Fahrenheit to 76 degrees Fahrenheit and is rarely below 43 degrees Fahrenheit or above 84 degrees Fahrenheit (Weather Speak 2021). The area receives an average of 13.23 inches of annual precipitation (U.S. Climate Data, 2021). The average wind speed throughout the year is approximately 7.6 miles per hour (mph) and travels on-shore from the west and southwest directions, see below for a more detailed description of wind patterns in the Pilot Project area.

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**Reference:**      **Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

### ***Topography***

The Ballona Creek Watershed is in the northwestern portion of the Los Angeles Basin from the Santa Monica Mountains to the north, Harbor Freeway to the east, and Baldwin Hills to the south. The major tributaries that flow into Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. The Watershed reaches its highest elevations on its northern and southern boundaries that makes up the Santa Monica Mountains and Baldwin Hills, respectively. The rest of the Basin is relatively flat and drains to the western boundary of the Basin that is at sea level.

### ***Odors***

Human reactions to odor can vary based on sensitivity. In most cases, symptoms will depend on the type of substance, concentration in the air, frequency of exposure, duration, as well as the individual's age and health. Some groups such as children, the elderly, and pregnant women may be more sensitive to odors. The most common symptoms from odor exposure are headaches, nasal congestion, chest tightness, nausea, and drowsiness (Agency for Toxic Substances and Disease Registry [ATSDR] 2015).

The Interceptor™ is in the South Coast Air Quality Management District (SCAQMD). The SCAQMD is the regulatory agency responsible for improving air quality for large areas of Los Angeles, Orange, Riverside, and San Bernardino Counties. The SCAQMD identifies certain land uses as sources of odor. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass modeling.

Landfills and trash collection areas generate hydrogen sulfide (H<sub>2</sub>S) gas that can be emitted from municipal solid waste as well as construction debris. H<sub>2</sub>S is mostly commonly emitted from the decomposition of organic material that is disposed. The compound emits a rotten-egg odor that can cause odor nuisance and health impacts to surrounding communities.

Land uses directly adjacent to the Pilot Project site include residential land uses, public beaches, and the Marina Del Rey harbor and marina which are not typically associated with odor nuisances. However, decomposing trash flowing down Ballona Creek can pose an odor problem as it is carried past nearby sensitive receptors. Moreover, the Pilot Project is approximately three miles north of the Hyperion Water Reclamation Plant. Hyperion Water Reclamation Plant is the largest sewage treatment facility in the Los Angeles Metropolitan Area and treats an average of 275 million gallons of wastewater on a dry weather day (Los Angeles Sanitation, 2021). In addition, the Pilot Project is approximately five miles north of the West Basin Water Municipal Water District's Edward C. Little Water Recycling Plant that produces approximately 40 million gallons of recycled, useable water per day. Water treatment plants generate odors associated with the decomposition of organic materials. Specifically, odor is associated with H<sub>2</sub>S and volatile organic compounds (VOCs), by-products of the decomposition process.

Hyperion Water Reclamation Plant has generated odor nuisance complaints by the surrounding community. Most recently, on July 11, 2021, a blockage in the facility caused raw sewage to flood the plant. Approximately 17 million gallons of raw sewage was dumped into the ocean as part of an emergency discharge. The release of raw sewage resulted in the release of odor-causing gases, complaints from nearby residences, and 25 Notices of Violations have been cited to Hyperion under SCAQMD Rule 402 (described above) (SCAQMD 2021).

The marine and seashore also generate odor that can impact nearby residents. Within the ocean, dimethyl sulfide (DMS) is formed by phytoplankton in surface seawater and released into the atmosphere. Once in the

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**Reference:** Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

atmosphere, DMS oxidizes to form sulfuric acid which creates a foul, rotten egg odor that can be carried by winds to on-shore residents (Leibniz Institute for Tropospheric Resources 2016).

### ***Pre-Construction Odors Measurements***

Stantec collected background ambient odor measurements prior to the start of construction of the Pilot Project on September 24, 2021, to compare the Pilot Project's potential odor nuisance to baseline conditions. Odor measurements were conducted using the SM100 Portable Olfactometer. The device allows users to quantify the ambient odor strength in odor units per cubic meter (OU/m<sup>3</sup>). The device draws a sample of fresh, odorless air from a compressed air tank and slowly mixes in ambient air until an odor is detected. To mix in the ambient air, users slowly open a dilution valve. The dilution valve was marked from 0 to 15, with each position on the valve corresponding to a different level of odor units. Measurements were taken at four locations to capture existing odor conditions at the nearest sensitive receptors to the east and northwest of the project site. To capture changing wind patterns that may impact how odor moves, three samples were taken at every site with an hour spacing between each sample. Locations of the sensitive receptors are provided in Figure 1.

**Figure 1: Locations of Odor Sensitive Receptors**



The olfactory perception threshold is equivalent to 1 OU/m<sup>3</sup>. The number of dilutions of the odor sample required to obtain 1 OU/m<sup>3</sup> indicates the odor concentration of the sample (Odotech 2014). The dilution valve on the olfactometer was marked 0 to 15, with 0 being the least ambient air added to the device and 15 corresponding to the highest composition of ambient air in the device. The more ambient air required to detect an odor, the lower the concentration of odor in the air. Ambient odor measurements are presented in Table 1 below.

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Reference: Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

**Table 1 Ambient Odor Level Measurements**

Receptor Number	Location	Time	Valve Position Indicator	OU/m <sup>3</sup>
1	Marina Del Rey Inlet and Park	10:00	8	14.6
		11:00	8	14.6
		12:00	7	19.0
2	5531 Ocean Front Walk	10:10	9	11.7
		11:10	7	19.0
		12:10	7	19.0
3	Ballona Creek Bridge	10:35	7	19.0
		11:35	6	27.1
		12:35	5	32.8
4	6201 Speedway	10:40	7	19.0
		11:40	5	32.8
		12:40	5	32.8

Source: Stantec Consulting Services, 2021.

As shown in Table 1, there is detectable odor that already occurs at sensitive receptors near the Pilot Project site. The existing, ambient odor likely originates from the ocean and the trash that floats down Ballona Creek and gets washed onshore. The strongest existing odors occur at 6201 Speedway and Ballona Creek Bridge, which are the closest receptors to the open ocean and the closest receptors to the site. The other receptors lie along Marina Del Rey Harbor.

## ODOR ANALYSIS

### *Wind Patterns*

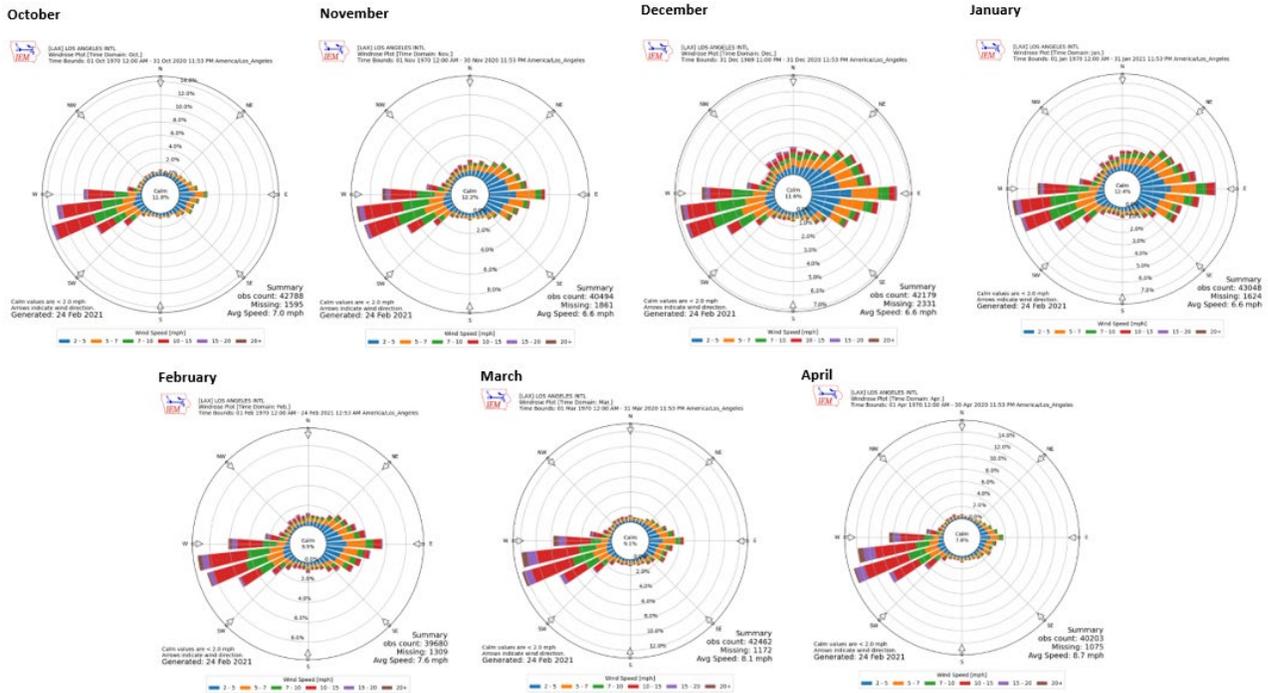
Odor will likely be generated from the trash as it is collected within the Interceptor™. Odor plumes may escape the vessel and travel based on the wind patterns and wind intensity. Wind data has been collected at the Los Angeles International Airport, located approximately 2.5 miles south of the Pilot Project site, from 1969 to 2021 to estimate the average annual wind direction and speed. The data has been plotted within a wind rose that presents a visual representation of the dominant wind directions and direction of strongest wind speeds. The Pilot Program is anticipated to operate during the wet season (November through April) in Los Angeles when storm surges would carry trash from the Ballona Creek into the ocean. Figure 2 shows the average wind speeds and wind direction from November to April. As shown in Figure 2, the most dominant wind and strongest winds originate off-shore, from the west and southwest. From December through January, wind also travels from the east to the ocean. Less than 2% of the time, winds will blow from the north or south direction. The average wind speed during the storm season is approximately 7.3 mph. Average wind speed is lowest from October to January and picks up from February to April. Similarly, calm wind conditions are more likely from October to January with the average time of calm conditions (meaning wind speeds less than 2.0 mph) ranging from 11.8% to 12.4% as compared to February to April months that ranges from 9.9% to 7.8% (NOAA, 2021).

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Reference: Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

Figure 2: Average Wind Direction and Speed (October through April)



Source: NOAA, 2021. See Attachment A.

**Comparable Projects**

The Interceptor™ is currently deployed in four locations across the globe. The first Interceptor™ was installed in 2016 in the Cengkareng Drain in Jakarta, Indonesia. In 2016, an Interceptor™ was also installed in the Klang River in Selangor, Malaysia, which has been identified as one of the 50 most polluting rivers worldwide. The third Interceptor™ was installed in the Rio Ozama in Santa Domingo, Dominican Republic. The fourth Interceptor™ was deployed in Can Tho river in Vietnam (The Ocean Cleanup 2021). These projects have not been a source of odor complaints or nuisance but were not deployed in residential areas.

Within the United States, other river clean up efforts have been underway in order to reduce trash flow to the ocean. For example, the Cities of Santa Ana, Newport Beach, and Costa Mesa implemented the Santa Ana Delhi Channel Diversion Project to eliminate dry weather flow and floating debris in the Santa Ana Delhi Channel to help improve water quality in Upper Newport Bay and to meet the TMDL set in the MS4 permit. The Santa Ana Delhi Channel Diversion Project diverts trash and debris flow from the Santa Ana Delhi Channel into a containment area while conveying dry weather flows into an Orange County Sanitation District trunk sewer main. The Santa Ana Delhi Channel Diversion Project may result in a build up of accumulated trash that could be considered a source of odors. Trash removal is expected to occur on a 30-day maintenance cycle, after each rain event, or as required through compliance with SCAQMD Rule 402. If odor presents an issue, then the City is required to remove odorous trash or increase the frequency of trash removal. The project became operational in 2017.

**Analysis**

Design with community in mind

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Mark Beltran Civil Engineer and Seta Marjanian, Associate Civil Engineer  
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**Reference: Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

The Pilot Project has the potential to generate odor emissions from the decomposition of trash storage on the Interceptor™ vessel. While there is a potential for the Pilot Project to generate odors, they are expected to be limited due to the following:

- Trash storage would be limited to 65 cubic yards;
- Trash bins would be equipped with bottom drains to prevent the accumulation of water;
- Trash bins would be regularly emptied when full and replaced with empty trash bins;
- Trash collected is expected to be approximately 75% inorganics, which have less potential to generate odors compared to organics; and,
- Similar Interceptor™ projects in other watersheds have not been observed by The Ocean Cleanup to generate substantial odors or have resulted in odor complaints.

## CONCLUSION AND RECOMMENDATIONS

Odor would dissipate with distance, but odor emissions have the potential to be carried by wind. As shown in Figure 1, on average the strongest winds will be generated from the west and southwest and travel onshore to the east and northeast directions. As a result, odor, if present, should travel east or northeast, away from the residences located to the southeast of the Pilot Project site. From December to February, there are also strong breezes that originate on-shore and travel from the east, carrying any odor out to open ocean. Residences towards the northeast in the direction of predominant winds are located over 1,200 feet from Pilot Project site and not likely to be subjected to substantial odor. Furthermore, the Pilot Project will be required to adhere to California Code of Regulations, Section 41700 of the California Health and Safety Code and SCAQMD Rule 402 (Nuisance). Violations of Rule 402 results in fines and penalties for the owner/operator that is determined once compliance is restored and based on SCAQMD investigation.

Moreover, routine operation and maintenance activities outlined in the Pilot Project's Operations, Maintenance, Repair, Rehabilitation, and Replacement Plan (OMRRR Plan) would reduce odor and the potential for an odor nuisance violation, including:

- Regularly scheduled cleaning of the inside/ outside of the Interceptor™ (frequency will be determined by LACPW during the first operational period); Inspection of the trash booms to ensure they are free of debris and physically intact;
- Weekly (first three months of operation) and monthly thereafter checks of the main conveyor belt and shuttle conveyor belt; and,
- Ensuring the trash boom is properly stored if not in use so trash is not accidentally collected along the creek when the Interceptor is not in use.

Therefore, the Interceptor™ is not anticipated to generate nuisance odor that will impact existing residential receptors.

**Stantec Consulting Services, Inc.**



Design with community in mind

March 15, 2022

Mark Beltran Civil Engineer and Seta Marjanian, Associate Civil Engineer  
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**Reference:      Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

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March 15, 2022

Mark Beltran Civil Engineer and Seta Marjanian, Associate Civil Engineer  
Page 10 of 10

**Reference:**      **Odor Assessment for the Ballona Creek Trash Interceptor™ Pilot Project**

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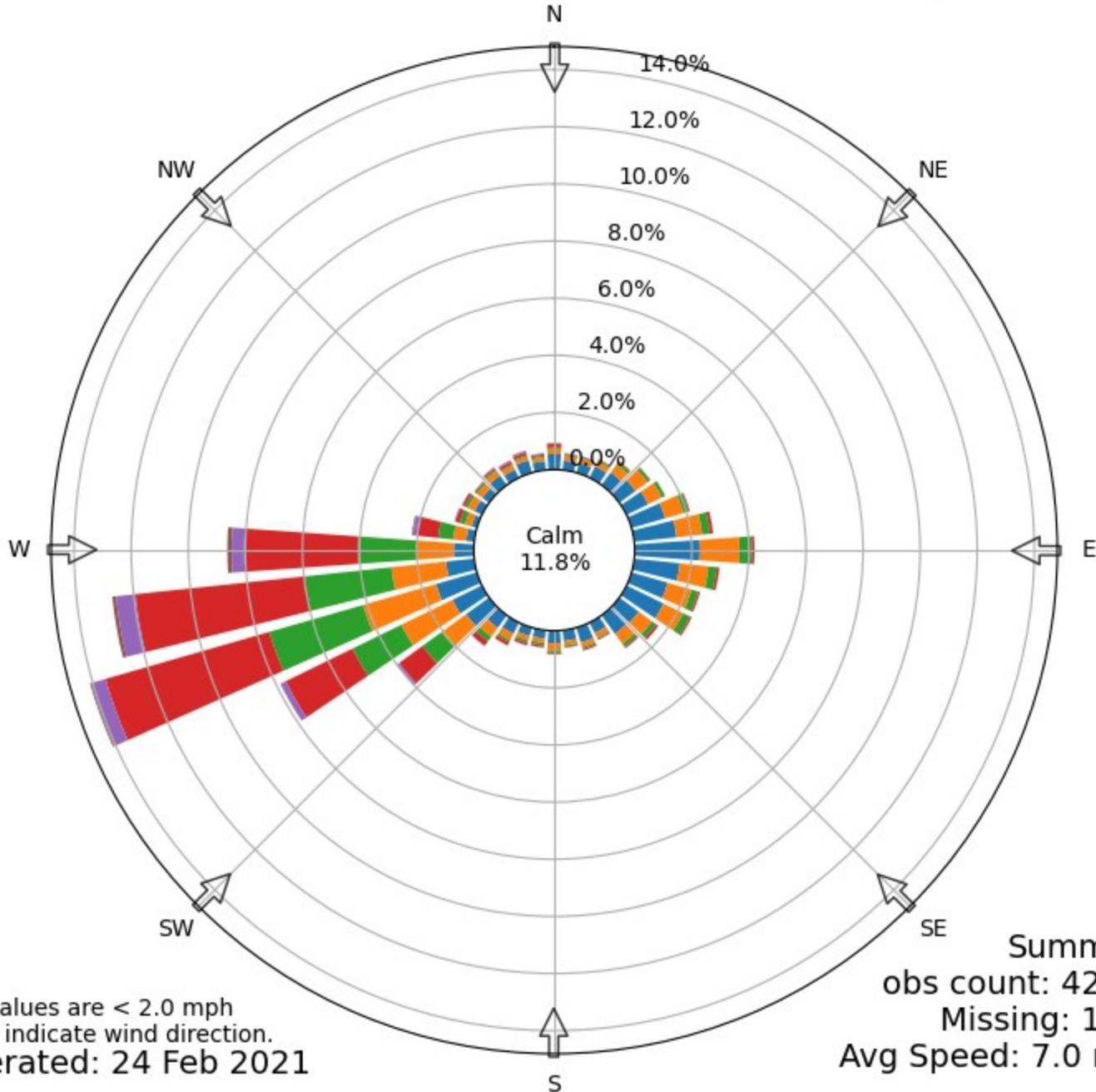
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# **Attachment A**

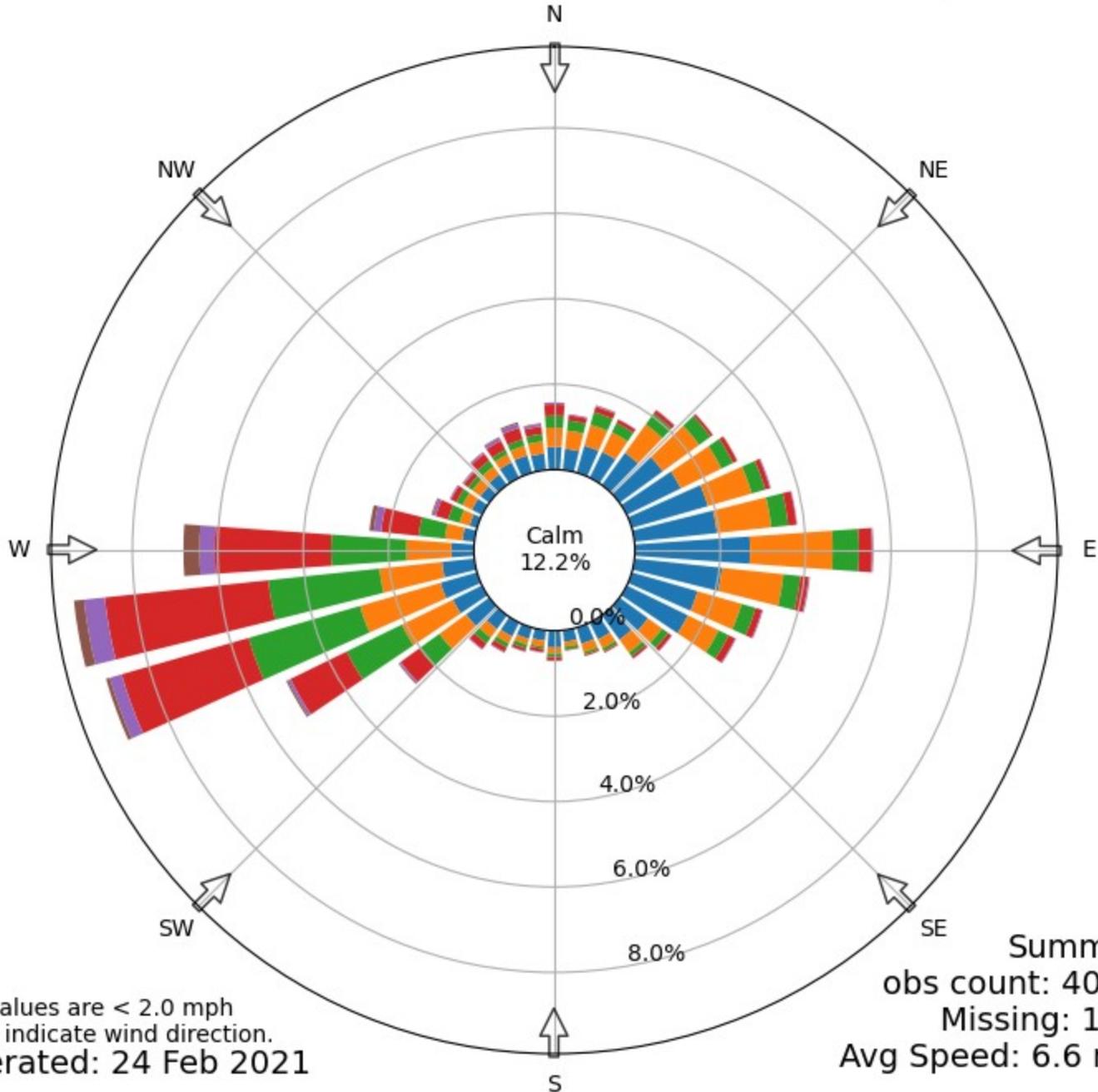
## **Wind Roses**



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Arrows indicate wind direction.  
Generated: 24 Feb 2021

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Missing: 1595  
Avg Speed: 7.0 mph

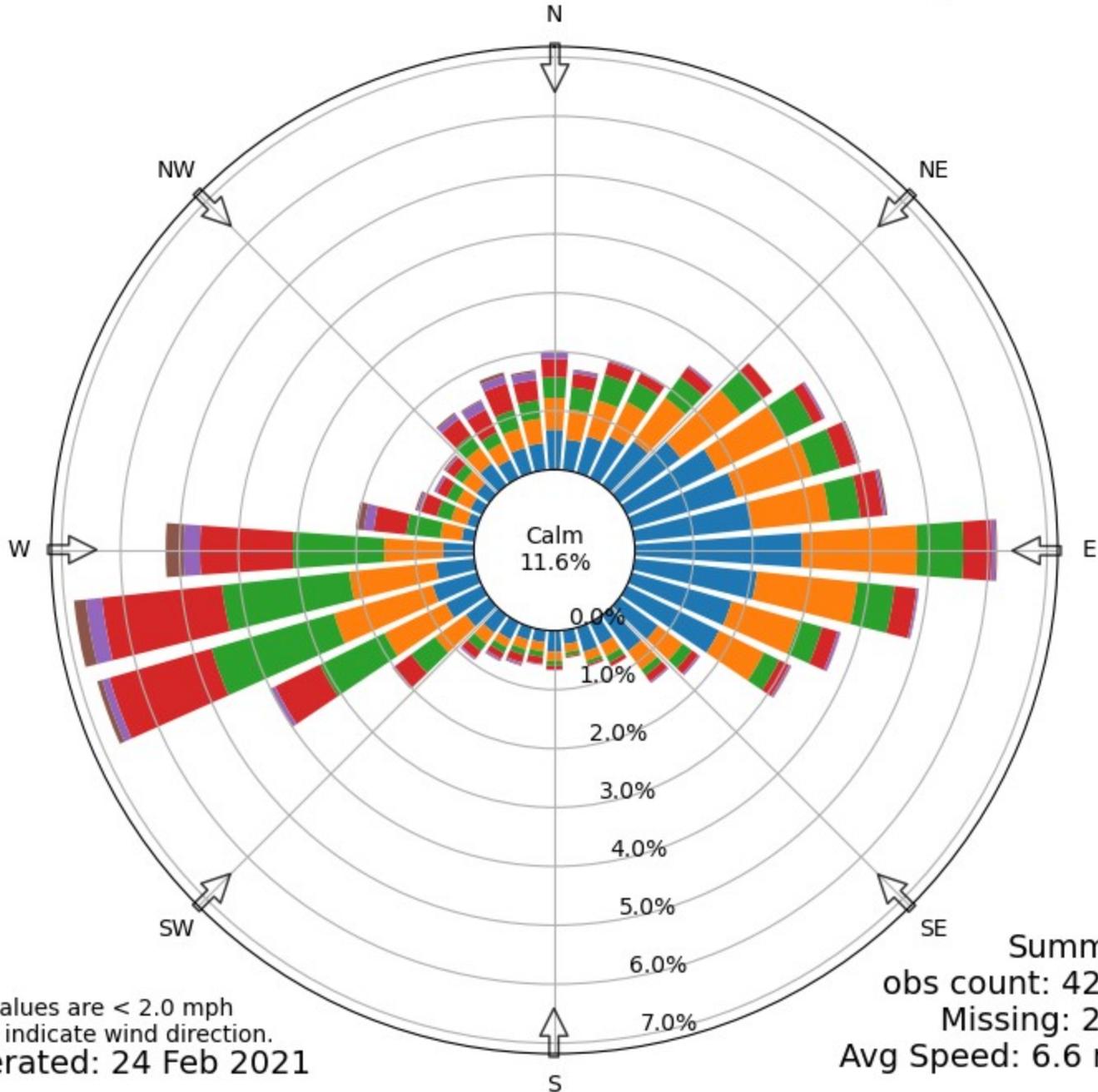




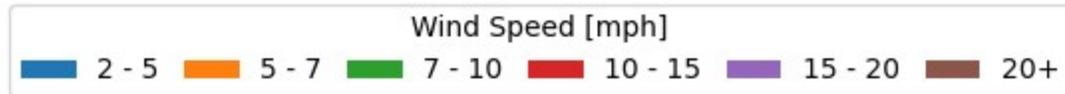
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Arrows indicate wind direction.  
Generated: 24 Feb 2021

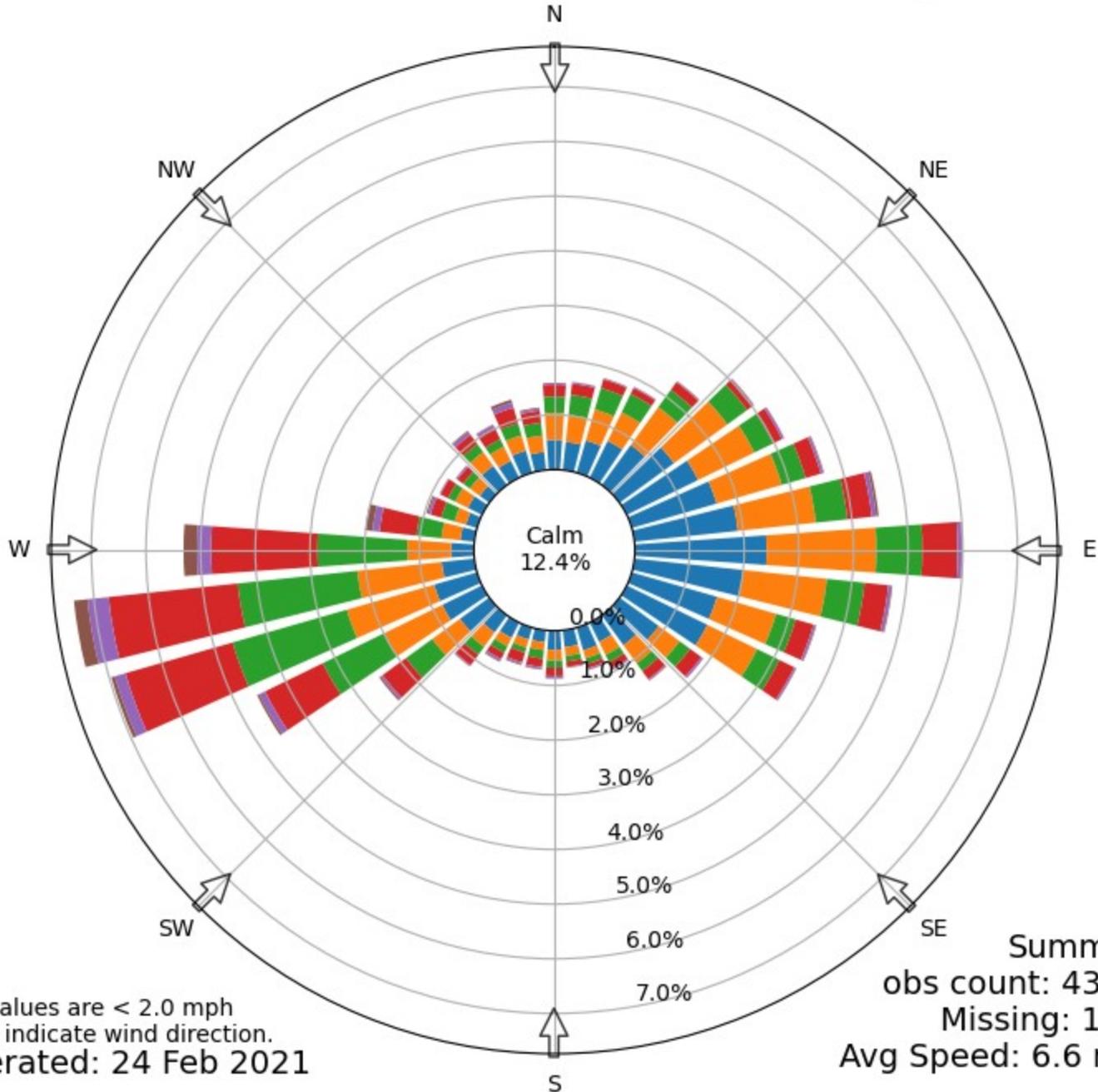
Summary  
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Missing: 1861  
Avg Speed: 6.6 mph





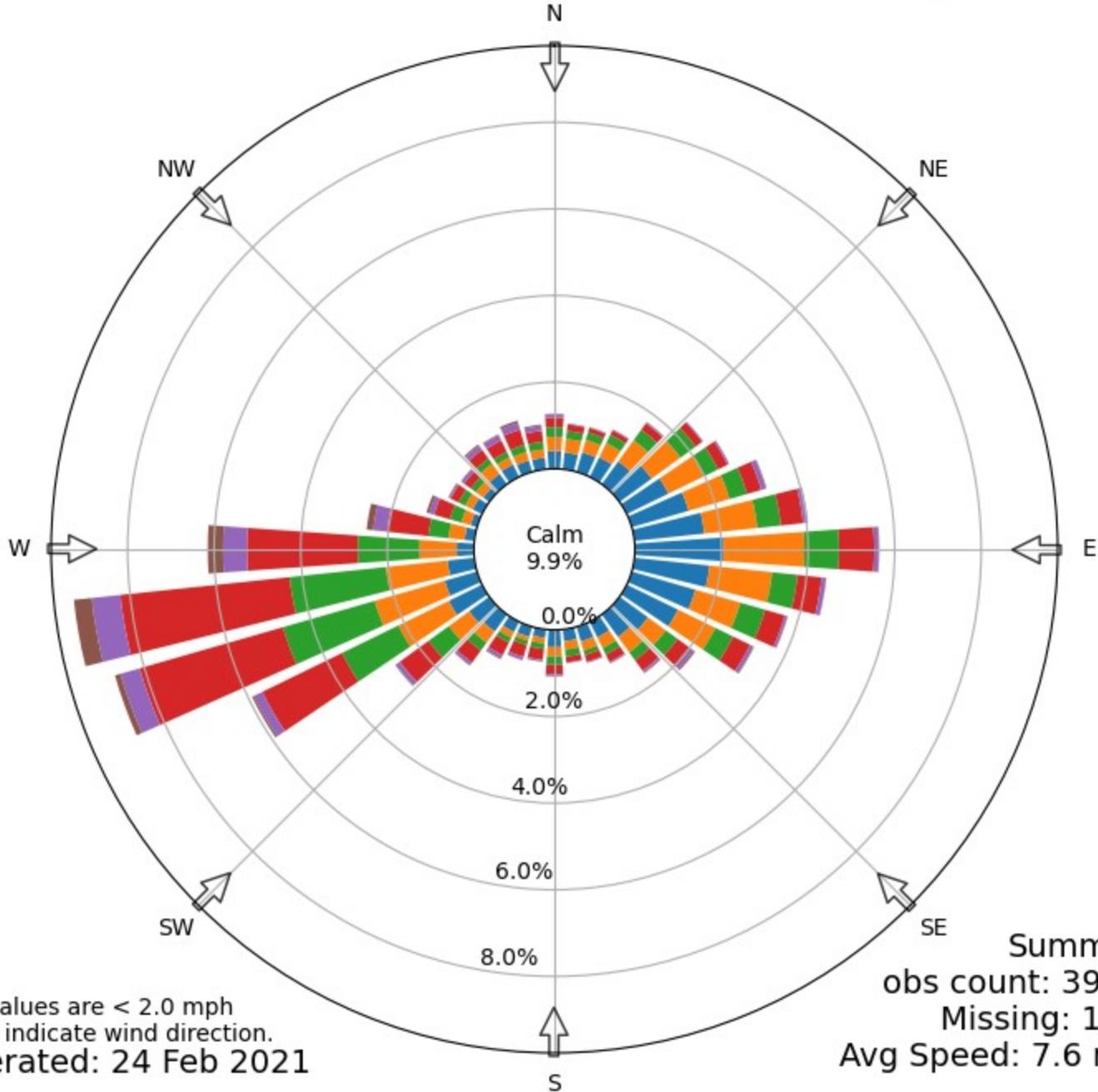
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Arrows indicate wind direction.  
Generated: 24 Feb 2021





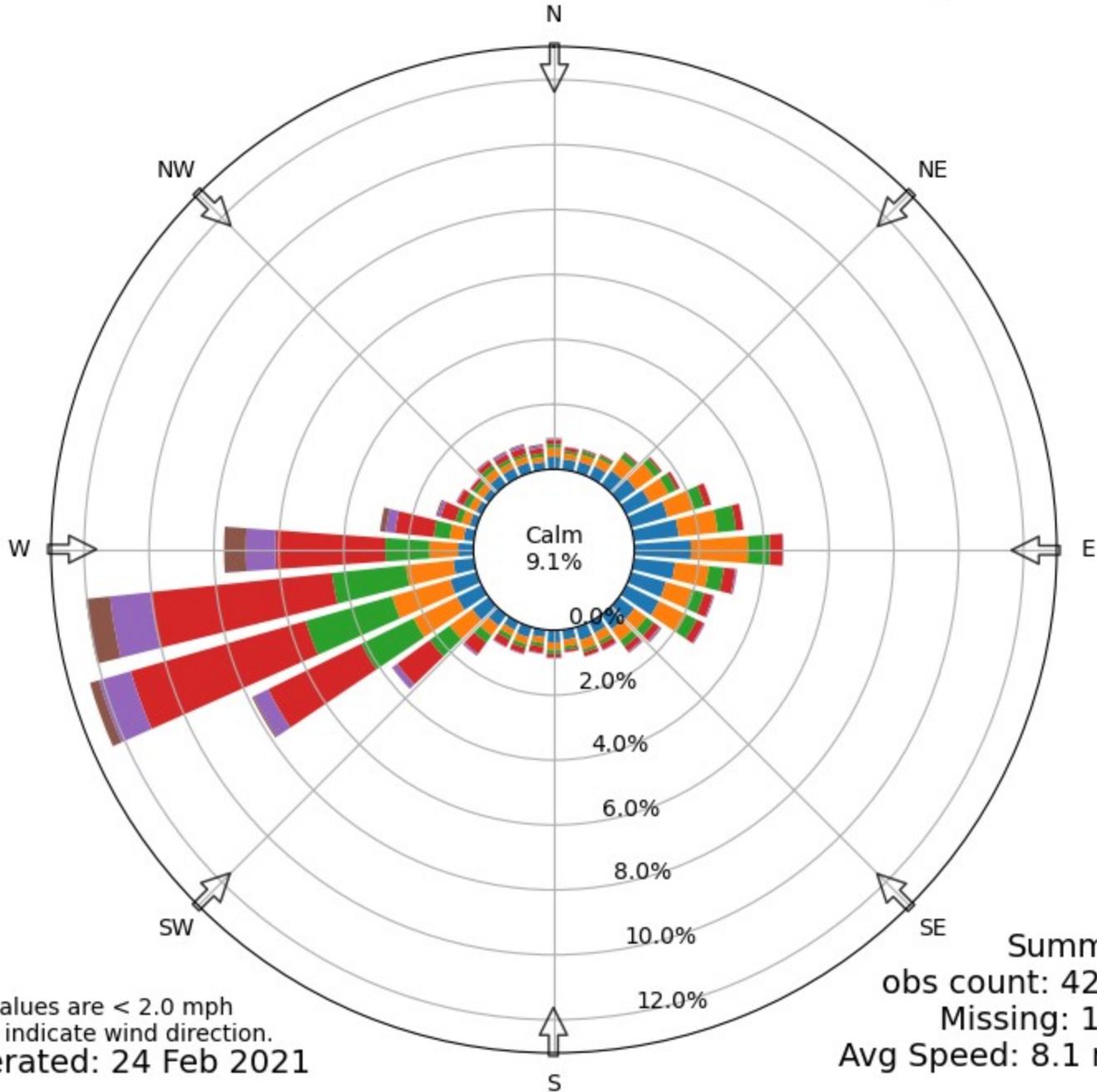
Calm values are < 2.0 mph  
Arrows indicate wind direction.  
Generated: 24 Feb 2021





Calm values are < 2.0 mph  
Arrows indicate wind direction.  
Generated: 24 Feb 2021





Calm values are < 2.0 mph  
Arrows indicate wind direction.  
Generated: 24 Feb 2021

Summary  
obs count: 42462  
Missing: 1172  
Avg Speed: 8.1 mph






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To:	Mark Beltran, Civil Engineer and Seta Marjanian, Associate Civil Engineer  Los Angeles County of Public Works 900 S. Fremont Ave. Alhambra, CA 91803	From:	Emily Ramos, Staff Scientist  Stantec Consulting Services Inc. 290 Conejo Ridge Avenue Thousand Oaks, CA 91361
File:	185804807	Date:	March 15, 2022

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## Reference: Vector Assessment for the Ballona Creek Trash Interceptor™ Pilot Project

Stantec Consulting Services Inc. (Stantec) is submitting this memorandum (memo) to Los Angeles County Public Works (LACPW) to assess potential vector nuisances to adjacent residential and public sensitive receptors as a result of the Ballona Creek Trash Interceptor™ Pilot Project (Pilot Project). This memo includes a description of the existing setting in Ballona Creek including potential vectors (e.g., rodents, sea aviary, flies and mosquitos) that may be common to Pilot Project area. A description of the Interceptor™ design and operational components (e.g., type and duration of vector attractants originating from the Interceptor and design features that may either attract and/or deter rodents/ pests), identification and analysis of comparative projects, as well as recommendations for preventive controls is also included herein.

## PROJECT OVERVIEW

The purpose of the Pilot Project is to capture and collect trash and debris in Ballona Creek before it enters the Pacific Ocean. The Interceptor™ system would be installed near the mouth of Ballona Creek where trash and debris enter the ocean, between the communities of Marina del Rey and Playa del Rey. The Interceptor™ would consist of a single vessel that is 74 feet in length, 29 feet wide, and 18.5 feet in height. It would be moored in Ballona Creek via six moorings—four of which anchor the vessel itself and two of which anchor two in-water floating trash booms—that would be installed above the ordinary high-water mark of Ballona Creek along the two existing jetties. The placement of floating trash booms (also called “barriers”) and the downstream current will cause trash drifting down Ballona Creek to be funneled into the Interceptor. The floating debris will converge on the Interceptor™’s mechanical conveyor belt, which automatically feeds the trash into a floating receptacle to prevent the refuse from reaching the Pacific Ocean. The trash is anticipated to be composed of approximately 75% inorganic and 25% organic wastes and would not exceed the maximum barge capacity of 65 cubic yards at any time.

The Interceptor™ would operate 24 hours a day and is expected to be deployed and in operation for two typical storm seasons (October 15 to April 15).

The Interceptor™ would include the following features relevant to this vector analysis:

- Interceptor™ vessel: a floating system that would be moored to the Ballona Creek North Jetty and Ballona Creek South Jetty above the high-water mark of Ballona Creek using four moorings and mooring lines to maintain its position.
- Barrier: River waste flowing with the current of the Creek will be guided by the carrier towards the opening of the Interceptor™. The Interceptor™’s catamaran design will optimize the water flow path as it passes through the system, carrying the plastic onto the conveyor belt.
- Conveyor Belt: The current of the creek will move the debris onto a conveyor belt that will continuously extract the debris from the water and will deliver the waste to the shuttle.

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- Shuttle System: A shuttle automatically distributes the debris across six dumpsters. Using sensor data, the containers are filled equally until they reach full capacity.
- Trash Transportation (Empty and Recycle): When the Interceptor™'s dumpster bins are almost full, a text message will be automatically sent to the local operators. Operators will then remove the dumpster barge, transfer it on a small vessel from the Interceptor™ to Marina del Rey Harbor for offloading, empty the dumpsters, send the debris to local waste management facilities, and return the barge back into the Interceptor™.

## EXISTING SETTING

### *Average Weather Conditions*

Ballona Creek is a 9-mile-long creek that runs through the 130 square mile Ballona Creek Watershed that encompasses portions of the City of Los Angeles, Beverly Hills, Inglewood, Santa Monica, West Hollywood, Culver City, and unincorporated County. The Interceptor™ would be placed along the coast at the western end of Ballona Creek to collect trash before it flows into the Santa Monica Bay and the Pacific Ocean. The coastal area of Los Angeles experiences warm, arid summers and cool, cloudy winters. In the Santa Monica area and western coast of Los Angeles, the warm season lasts approximately 3.2 months, from July to October. The cool season lasts approximately 4.1 months, from December to April. The temperature in coastal Los Angeles typically varies from 49 degrees Fahrenheit to 76 degrees Fahrenheit and is rarely below 43 degrees Fahrenheit or above 84 degrees Fahrenheit (Weather Speak 2021). The area receives an average of 13.23 inches of annual precipitation (U.S. Climate Data, 2021).

### *Topography*

The Ballona Creek Watershed (Project Area) is in the northwestern portion of the Los Angeles Basin from the Santa Monica Mountains to the north, Harbor Freeway to the east, and Baldwin Hills to the south. The major tributaries that flow into Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. The Watershed reaches its highest elevations on its northern and southern boundaries that makes up the Santa Monica Mountains and Baldwin Hills, respectively. The rest of the Basin is relatively flat and drains to the western boundary of the Basin that is at sea level.

### *Vegetation Types and Habitat Areas*

The Pilot Project area includes aquatic and mudflat habitats, tidal salt marsh, non-tidal wetland, unvegetated salt pan, and brackish marsh habitat (Stantec, 2020). Non-native annual grasslands, stabilized dune habitat, a eucalyptus grove, and a coastal scrub habitat are also present in the Pilot Project area, along with the surrounding community residential and commercial developments of Marina del Rey, Playa del Rey, Playa Vista, and Westchester. These areas include common plant species and vegetation communities found in the coastal areas of southern California. Habitat conditions within the vegetated portions of the Pilot Project area were noted to be of generally good quality, with well-established communities comprised of native and non-native shrub and herbaceous species (Stantec 2020). Vegetation communities present in the Pilot Project area include invasive monoculture, pickleweed mats alliance, ice plant mats alliance, dune mat alliance, open water, sandy beach, and disturbed and developed land covers.

The above-referenced vegetation types and habitat areas could provide a host habitat for rodents and sea aviary and the surrounding water resources could potentially attract flies and mosquitos and allow for breeding habitats.

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## **VECTOR ANALYSIS**

### ***Comparable Projects***

The Interceptor™ is currently deployed in four locations across the globe. The first Interceptor™ was installed in 2016 in the Cengkareng Drain in Jakarta, Indonesia. In 2016, an Interceptor™ was also installed in the Klang River in Selangor, Malaysia, which has been identified as one of the 50 most polluting rivers worldwide. The third Interceptor™ was installed in the Rio Ozama in Santa Domingo, Dominican Republic. The fourth Interceptor™ was deployed in Can Tho river in Vietnam (The Ocean Cleanup 2021). To date, these projects have not been a source of vector nuisance complaints or concerns.

Within the United States, other river cleanup efforts have been underway to reduce trash flow to the ocean. For example, the Cities of Santa Ana, Newport Beach, and Costa Mesa implemented the Santa Ana Delhi Channel Diversion Project to eliminate dry weather flow and floating debris in the Santa Ana Delhi Channel to help improve water quality in Upper Newport Bay and to meet the total maximum daily loads set in the Los Angeles Municipal Separate Storm Sewer System permit. The Santa Ana Delhi Channel Diversion Project diverts trash and debris flow from the Santa Ana Delhi Channel into a containment area while conveying dry weather flows into an Orange County Sanitation District trunk sewer main. The Santa Ana Delhi Channel Diversion Project may result in a buildup of accumulated trash that could be considered a source of habitat or breeding ground for vectors. Trash removal is expected to occur on a 30-day maintenance cycle, after each rain event, or as required through compliance with SCAQMD Rule 402. If odor presents an issue, then the City is required to remove odorous trash or increase the trash removal schedule.

These projects are expected to deter rodents and other vectors from nearby shores and surrounding areas due to the cleanup efforts.

### ***Design Characteristics***

Due to the consistent flow of water, the barriers on the Interceptor™ would not attract the growth of bacteria or algae due to trash, and would therefore not attract rodents, flies, or sea aviary. In addition, there would be minimal opportunity for rodents, mosquitoes, or flies to breed and live on the conveyor belt or shuttle system due to their placement and constant movement within Ballona Creek. Dumpsters would provide the greatest potential for breeding and habitat for vectors. However, the dumpsters would be placed in the middle of Ballona Creek and surrounded by water preventing rodent access. In addition, bird deterrents would be installed on the Interceptor™ to deter sea aviary access to the dumpsters. The trash transportation process would not allow for vectors to breed and live as the trash is not kept on site, nor would it be stored for long periods of time.

In general, the Interceptor™ would not alter any of the existing habitats in the Pilot Project area and would therefore not enhance the potential for habitat or breeding grounds for rodents, mosquitoes, flies, or sea aviary.

### ***Operation and Maintenance Activities and Other Preventive Controls***

Routine operation and maintenance activities outlined in the Pilot Project's Operations, Maintenance, Repair, Rehabilitation, and Replacement Plan (OMRRR Plan) would further prevent and/or minimize the potential for vector nuisances. Example potential measures include but are not limited to:

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- Regularly scheduled cleaning of the inside/ outside of the Interceptor™ (frequency will be determined by LACPW during the first operational period);
- Inspection of the trash booms to ensure they are free of debris and physically intact;
- Weekly (first three months of operation) and monthly thereafter checks of the main conveyor belt and shuttle conveyor belt;
- Access by wildlife to the trash collected in the Interceptor™ will be monitored and addressed as needed to avoid creating an attractive nuisance; and,
- Ensuring the trash boom is properly stored if not in use

Mosquito Control

Stagnant ponds (poor water quality) and high levels of organic matter and/or nutrients (e.g., ammonia, nitrogen) from the presence of animal waste provide the conditions for bacteria and algae growth used as food sources by mosquito larvae. The following measures are proposed to minimize/manage mosquito larvae and adult mosquito occurrence on-site.

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- Adequate drainage would be maintained on the Interceptor™, and the Interceptor™ would be inspected on a regular basis to avoid ponding; and,
- The Interceptor™ would be deployed during the storm season when mosquito presence is less likely to be an issue.

The likelihood of mosquito presence increasing due to the Interceptor™ is minimal since the trash Interceptor™ system would primarily be collecting inorganic waste (approximately 75%) and would allow for adequate drainage. In addition, the Interceptor™ would be routinely and periodically cleared, leaving minimal time for mosquitos to make a home and breed.

Rodent Control

Approximately 25% of the material collected by the Interceptor™ would be organic waste that could provide conditions for rodents and rodent breeding to occur. However, the likelihood of rodent presence is minimal since the trash Interceptor™ system would be sitting in floating water and it is not expected that rodents would swim to access the Interceptor™ or climb across the trash booms and/or anchor lines. Also, it is routinely and periodically cleared, leaving minimal time for rodents to make a home and breed.

No other preventative controls are recommended.

Fly Breeding Control

High levels of organic matter and/or nutrients (e.g., ammonia, nitrogen) from the presence of trash waste provide the conditions for bacteria and algae growth used as a food sources by fly larvae. However, as noted, only 25% of trash collected by the Interceptor™ is anticipated to be organic materials. Furthermore, the likelihood of fly presence is minimal since the trash Interceptor™ system will be routinely and periodically cleaned and cleared (per the OMRRR), leaving minimal time for fly species to make a home and breed.

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No other preventative controls are recommended.

#### Sea Aviary Control

Organic waste collected by the Interceptor™ could potentially attract sea aviary. As previously noted, only 25% of trash collected would be organic materials. Bird deterrents would also be installed on the Interceptor™ to deter sea aviary access to the Interceptor™ and its components. In addition, LACPW would implement the Pilot Project's OMRRR, which would include standard operational guidelines to minimize and/or manage bird occurrence.

No other preventative controls are recommended.

## **CONCLUSION AND RECOMMENDATIONS**

With the implementation of the above-referenced operations and maintenance activities and preventive controls, the likelihood of vector presence/nuisance increasing due to the Pilot Project is minimal. Operation of the Pilot Project would not alter any of the existing habitats in the Pilot Project area and would therefore not enhance the potential for habitat or breeding grounds for rodents, mosquitoes, flies, or sea aviary. Moreover, LACPW would comply with the applicable public health and safety codes, such as the California Code of Regulations, Section 41700 of the California Health and Safety Code, to further minimize the potential for vector nuisances. Therefore, the Pilot Project is not anticipated to generate nuisance vector issues that will impact existing residential and recreational receptors.

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